THE

AMERICAN JOURNAL

OF THE MEDICAL SCIENCES

FOR APRIL 1853.

CONTRIBUTORS TO THIS VOLUME.

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TO READERS AND CORRESPONDENTS.

We have received, from Dr. George C. Blackman, an account of a very extraordinary case of Hermaphroditism, which we have been prevented inserting in this Number, in consequence of the drawing, with which it is to be illustrated, not having come to hand. The author will oblige us by forwarding the cast or drawing as early as possible.

Several communications are on hand, which shall receive early attention.

We had hoped to be able to give, in our present number, a Review of Dr. H. Smith's beautifully illustrated Operative Surgery; but the friend who undertook that task, when it was nearly completed, was attacked by illness, which prevented his preparing it in time. It shall appear in our next number.

The following works have been received:—

An Introduction to Clinical Medicine. Six Lectures on the Method of examining Patients; Percussion; Auscultation; the Use of the Microscope; and the Diagnosis of Skin Diseases. By JOHN HUGHES BENNETT, M. D., F. R. S., Professor of the Institutes of Medicine, and of Clinical Medicine in the University of Edinburgh. Second edition, with numerous wood-cuts. Edinburgh, 1853. (From the Author.)

On Near Sight, Aged Sight, Impaired Vision, and the Means of Assisting Sight. By WILLIAM WHITE COOPER, F. R. C., S.E., Ophthalmic Surgeon to St. Mary's Hospital, Senior Surgeon to the North London Eye Infirmary and to the Artillery Company, &c. &c. &c. Second edition. London, 1853. (From the Author.)

On Diseases of Women and Ovarian Inflammation, in relation to Morbid Menstruation, Sterility, Pelvic Tumours, and Affections of the Womb. By EDWARD JOHN TILT, M. D., Senior Physician to the Farringdon General Dispensary, and to the Paddington Free Dispensary for the Diseases of Women and Children, &c. &c. Second edition. London, 1853. (From the Author.)

Bethlem Hospital. The Observations of the Governors upon the Report of the Commissioners in Lunacy to the Secretary of State on Bethlem Hospital with Appendices. London, 1852. (From Dr. Jno. Webster.)

Syphilitic Diseases; their Pathology, Diagnosis, and Treatment, including Experimental Researches on Inoculation, as a Differential Agent in Testing the Character of these Affections. By JOHN C. EGAN, M.D., M. R. I. A., Fellow and Licentiate of the Royal College of Surgeons in Ireland, formerly Surgeon to the Westmoreland Lock Hospital, &c. &c. London: John Churchill, 1853. (From the Author.)

Appendix to the Treatise on the Structure, Diseases, and Injuries of the Bloodvessels. With Statistical Deductions. Being the Essay to which the Jacksonian Prize, for the year 1844, was awarded by the Royal College of Surgeons of England. By EDWARD CRISP, M. D., Physician to the Metropolitan Dispensary, &c. London, 1851. (From the Author.)

On Perforating Ulcer of the Stomach, from Non-Malignant Disease: Part I. By EDWARD CRISP, M. D., Physician to the Metropolitan Dispensary. Reprinted from the "London Medical Examiner." London, 1852. (From the Author.)

A System of Practical Surgery. By WM. FERGUSSON, F.R.S., Professor of Surgery in King's College, London. Fourth American from the third and enlarged London edition. With three hundred and ninety-three illustrations. Philadelphia: Blanchard & Lea, 1852. (From the Publishers.)

On Diseases of the Liver. By GEORGE BUDD, M. D., F. R. S., &c. Second American from the last and improved London edition. With coloured plates and wood-cuts. Philadelphia: Blanchard & Lea, 1853. (From the Publishers.)

Manual of Physiology. By WM. SENHOUSE KIRKES, M. D., and JAMES PAGET, F. R. S. Second American from the second London edition. With one hundred and sixty-seven illustrations. Philadelphia: Blanchard & Lea, 1853. (From the Publishers.)

What to observe at the Bedside and after Death in Medical Cases. Published under the authority of the London Medical Society of Observation. Philadelphia: Blanchard & Lea, 1853. (From the Publishers.)

Atlas of Pathological Histology. By Dr. GOTTLEIB GLUGE, Professor of Physiology and Pathological Anatomy in the University of Bruxelles; Member of the Royal Academy of Sciences of Bruxelles; etc. Translated from the German by JOSEPH LEIDY, M. D., Pathologist to St. Joseph's Hospital, Philadelphia, etc. etc. With three hundred and twenty figures, plain and coloured, on twelve copperplate engravings. Philadelphia: Blanchard & Lea, 1853. (From the Publishers.)

Transactions of the American Medical Association, instituted 1847. Vol. V. Philadelphia, 1852.

Quarterly Summary of the Transactions of the College of Physicians of Philadelphia, from November 3, 1852, to January 5, 1853, inclusive.

Transactions of the Medical Society of the State of North Carolina, at its third annual meeting in Wilmington, North Carolina, May, 1852. Wilmington, 1852.

Faculté de Médecine de Paris. Thèse pour le Doctorat en Médecine presentée et soutenue le 5 Août, 1852. Par SAMUEL LEE BIGELOW, né à Boston, U. S., M. D. Recherches sur les calculs de la vessie, et sur leur analyse micro-chimique. 4to. avec un Atlas folio, Planches VIII. Paris, 1852. (From the Author.)

Minutes of two Annual Meetings of the Medical Missionary Society in China; including the Sixteenth Report of its Ophthalmic Hospital at Canton, for the years 1850 and 1851. Canton, 1852. (From Dr. P. Parker.)

Report of the Hospital at Ningpo, for 1852; under the Medical Missionary Society in China. By DANIEL J. MACGOWAN, M. D. Canton, 1852. (From the Author.)

Sixteenth Annual Report of the Trustees and Superintendent of the Vermont Asylum for the Insane, August, 1852. Brattleboro', 1853.

Tenth Annual Report of the Managers of the State Lunatic Asylum of the State of New York. Transmitted to the Legislature, Feb. 16, 1853. Albany, 1853. (From Dr. T. R. Beck.)

Report of the Obstetric Committee on Anæsthesia in Midwifery, and the Speculum Uteri. By HENRY MILLER, M. D., of Louisville, Ky. Reprinted for private distribution from the Transactions of the Kentucky State Medical Society. Louisville, 1853. (From the Author.)

Report of the Board of Managers of the [Missouri] State Lunatic Asylum to the Seventeenth General Assembly. Jefferson City, 1853.

Annual Reports of the Officers of the New Jersey State Lunatic Asylum at Trenton, for the year 1853. Trenton, 1853.

Report of the Pennsylvania Hospital for the Insane, for the year 1852. By THOMAS KIRKBRIDE, M. D., Physician to the Institution. Philadelphia, 1853.

Report of the Board of Visitors of the Maryland Hospital (for the Insane at Baltimore) to the General Assembly of Maryland, for the year 1852. Baltimore, 1853.

Education of Idiots. An Appeal to the Citizens of Philadelphia. Philadelphia, 1853. (From J. B. Richards, Esq.)

A Treatise on the Causes, Constitutional Effects, and Treatment of Uterine

Displacements. By WILLIAM EDWARD COALE, M. D. Boston, 1852. (From the Author.)

New Views on Provisional Callus. By FRANK H. HAMILTON, A. M., M. D. Buffalo, 1853. (From the Author.)

Hydatids of the Liver, Operation and Cure. By J. EDWARD WEBER, M. D. New York, 1852. (From the Author.)

The Obstetric Catechism; containing 2347 Questions and Answers on Obstetrics Proper. By JOSEPH WARRINGTON, M. D. With one hundred and fifty illustrations. Philadelphia: Barrington & Haswell, 1853. (From the Publishers.)

Remarks on Osteo-Aneurism, with a Case involving the Condyles of the Left Femur. By J. M. CARNOCHAN, M. D., Professor of the Principles and Operations of Surgery in the New York Medical College; Surgeon to the State Emigrants' Hospital, etc. etc. With two plates. From the New York Medical Gazette. New York, 1853. (From the Author.)

Elephantiasis Arabum of the Right Inferior Extremity, successfully treated by Ligature of the Femoral Artery. By J. M. CARNOCHAN, M. D., Professor of the Principles and Operations of Surgery in the New York Medical College; Surgeon to the State Emigrants' Hospital, etc. etc. With a plate. From the New York Journal of Medicine, September, 1852. New York, 1852. (From the Author.)

Prize Essay. On Variations of Pitch in Percussion and Respiratory Sounds, and their Application to Physical Diagnosis. By AUSTIN FLINT, M. D., of Buffalo, New York. Reprinted for private distribution from the Transactions of the American Medical Association, 1852. Buffalo, 1852. (From the Author.)

Materia Medica, or Pharmacology and Therapeutics. By WILLIAM TULLY, M. D. Vol. I., Nos. 2, 3, 4. Springfield, Mass.: published by Jefferson Church, M. D., 1852. (From Jefferson Church, M. D.)

Principles of Organic and Physiological Chemistry. By CARL LÖWIG, Ordinary Professor of Chemistry in the University of Zurich, etc. Translated by DANIEL BREED, M. D., of the U. S. Patent-Office, etc. Philadelphia: A. Hart, late Carey & Hart, 1853. (From the Publisher.)

Tenth Report to the Legislature of Massachusetts relating to the Registry of Births, Marriages, and Deaths, in the Commonwealth, for the year ending Dec. 31, 1851. By AMASA WALKER, Secretary of Commonwealth. Boston, 1852. (From the Author, J. Curtis, M. D.)

An Examination of the Question of Anæsthesia arising on the Memorial of CHARLES THOMAS WELLS. Presented to the United States Senate, Second Session, Thirty-Second Congress, and referred to a Select Committee, of which the Hon. ISAAC P. WALKER is Chairman. Prepared for the information of said Committee.

Report of the Select Committee to which was referred the various Memorials, in regard to the Discovery of the Means by which the Human Body is rendered insensible to Pain under Surgical Operations. Made to the Senate by the Hon. ISAAC P. WALKER. Washington, 1853.

Lectures on the Science of Life Insurance, addressed to Families, Societies, Trades, Professions, Considerate Persons of all Classes. By MOSES L. KNAPP, M. D., Secretary of the Fraternal Mutual Life Insurance Company, etc. Second edition. Philadelphia: E. S. Jones & Co., 1853.

A Clinical Phrase-Book; in English and German, containing the usual Questions and Answers employed in examining and prescribing for Patients, &c.; with an English-German, and German-English Pronouncing Lexicon, &c. &c. &c. By MONTGOMERY JOHNS, M. D. Philadelphia: Lindsay & Blakiston, 1853. (From the Publishers.)

The Opium Trade; including a Sketch of its History, Extent, Effects, &c., as carried on in India and China. By NATHAN ALLEN, M. D. Second edition. Lowell, 1853. (From the Author.)

Anniversary Discourse before the New York Academy of Medicine, delivered in the Chapel of the University of New York, November 3, 1853. By F. Campbell Stewart, M. D. Published by order of the Academy. New York, 1853. (From the Author.)

An Address at the Laying of the Corner Stone of the Savannah Medical Institute, delivered by the Hon. Jno. Macpherson Berrien, on the 17th of Jan. 1853. Savannah, 1853.

Relations of Popular Education with the Progress of Empiricism. Annual Address read before the New Jersey State Medical Society, at the eighty-seventh Anniversary held at Trenton, January 25, 1853. By Othneil H. Taylor, M. D., of Camden, President for 1852. Published by order of the Society. Burlington, 1853. (From the Author.)

An Introductory Lecture on the Treatment of Disease, delivered before the Medical Class at the Massachusetts Medical College, in Boston, November 3, 1852. By Jacob Bigelow, M. D., Professor of Materia Medica and Clinical Medicine in Harvard University, and Senior Physician of the Massachusetts General Hospital. Boston, 1853. (From the Author.)

A Discourse delivered to the Class of the Kentucky School of Medicine, November 3, 1852, introductory to a Course on Surgery. By Joshua B. Flint, Professor of Principles and Practice of Surgery. Louisville, 1852. (From the Author.)

History of the Medical Department of the University of Louisville; an Introductory Lecture delivered November 1, 1852. By Lunsford P. Yandell, M. D., Professor of Physical and Pathological Anatomy. Louisville, 1852. (From the Author.)

The Incentives, Means, and Rewards of Study; an Introductory Address delivered at the opening of the thirty-third Annual Course of Lectures in the Medical College of Ohio, November 1, 1852. By L. M. Lawson, M. D. Cincinnati, 1852. (From the Author.)

Lecture Introductory to the Second Course in the Medical Department of the University of Nashville. Delivered at the Odd Fellows' Hall, November 1, 1852, by appointment of the Faculty of Medicine. By W. K. Bowling, M. D., Professor of the Institutes and Practice of Medicine. Nashville, June, 1853.

Valedictory Address to the Graduates of the Medical Department of Pennsylvania College. By F. G. Smith, M. D., Professor of the Institutes of Medicine. With a list of the Graduates. Philadelphia, 1853. (From the Author.)

Valedictory Address to the Graduates of Jefferson Medical College of Philadelphia. Delivered at the Public Commencement, held March 9, 1853. With a list of the Graduates. By Franklin Bache, M. D. Published by the Graduating Class. Philadelphia, 1853. (From the Author.)

Introductory Address delivered by Prof. J. C. Hughes before the Class of Medical Students, at the opening of the Session of 1852—53 of the College of Physicians and Surgeons of the Iowa University. Keokuk, 1852. (From the Author.)

The following Journals have been received in exchange:—

Annales Médico-Psychologiques. Edited by Drs. Baillarger, Brierre de Boismont, and Cerise. October, 1852.

Gazette Médicale de Paris. Nos. 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 1852, and Nos. 1, 2, 3, 1853.

Journal des Connaissances Médico-Chirurgicales. Publié par le Dr. A. Martin-Lauzer. Nos. 7, 8, 9, 17, 18, 19, 20, 21, 22, 23, 24, 1852.

Revue de Thérapeutique Médico-Chirurgicale. Publié par Martin-Lauzer. Nos. 1, 2, 3, 1853.

The British and Foreign Medico-Chirurgical Review. January, 1853.

The Journal of Psychological Medicine and Mental Pathology. Edited by Forbes Winslow, M. D. January, 1853.

Monthly Journal of Medical Science. Conducted by Professors CHRISTISON, SYMES, SIMPSON, BENNETT, and Drs. MACLAGAN and ROBERTSON. January, February, March, 1853.

The Half-Yearly Abstract of the Medical Sciences. Edited by W. H. RANKING, M. D., Cantab., and C. B. RADCLIFFE, M. D., London. Vol. XVI. July, December, 1852.

The Retrospect of Medicine. Edited by W. BRAITHWAITE, Lecturer on Obstetric Medicine. Vol. XXVI. July, December, 1852.

The Medical Times and Gazette. January, February, March, 1853.

Association Medical Journal. Edited by JOHN ROSE CORMACK, M. D., Nos. 1, 2, 3, 4, 9, 1853.

The Dublin Quarterly Journal of Medical Science. February, 1853.

Guy's Hospital Reports. Edited by E. L BIRKETT, M. D., and ALFRED POLAND, F. R. C. S. December, 1852.

Canada Medical Journal and Monthly Record of Medical and Surgical Science. Edited by R. L. MACDONNELL, M. D., and A. H. DAVID, M. D. January, February, 1853.

The American Journal of Insanity. Published by the New York State Lunatic Asylum, Utica. January, 1853.

The American Journal of Science and Arts. Conducted by Professors B. SILLIMAN, B. SILLIMAN, Jr., and JAMES DANA, aided by WOLCOTT GIBBS, and ASA GRAY. January, March, 1853.

The American Journal of Pharmacy. Published by authority of the Philadelphia College of Pharmacy. Edited by WM. PROCTER, Jr., Professor of Pharmacy. January, March, 1853.

Boston Medical and Surgical Journal. Edited by J. V. C. SMITH, M. D. January, February, March, 1853.

The Southern Medical and Surgical Journal. Edited by L. A. DUGAS, M. D. January, February, March, 1853.

The New York Medical Times. Edited by H. D. BUCKLEY, M. D. January, February, March, 1853.

The New York Medical Gazette and Journal of Health. Edited by D. M. REESE, M. D. January, February, 1853.

The Southern Journal of the Medical and Physical Sciences. Editors, Drs. JNO. W. KING, WM. P. JONES, R. O. CURREY, and B. WOOD. January, March, 1853.

The Ohio Medical and Surgical Journal. Edited by RICHARD L. HOWARD, M. D. January, March, 1853.

The New York Journal of Medicine. Edited by S. S. PURPLE, M. D. November, 1852, January, March, 1853.

The New Orleans Medical and Surgical Journal. Edited by A. HESTER, M. D. January, March, 1853.

Buffalo Medical Journal and Monthly Review of Medicine and Surgery. Edited by AUSTIN FLINT, M. D. January, March, 1853.

The Medical Examiner. Edited by F. G. SMITH, M. D., and JOHN B. BIDDLE, M. D. January, February, March, 1853.

The East Tennessee Record of Medicine and Surgery. Edited by FRANK A. RAMSEY, M. D. January, 1853.

The North-Western Medical and Surgical Journal. Edited by W. B. HERRICK, M. D., assisted by H. A. JOHNSON, M. D. December, 1852, January, February, 1853.

The Western Medico-Chirurgical Journal. Edited by J. F. SANFORD, M. D. December, 1852, January, 1853.

The Medical Recorder. Edited by A. P. MERRILL, M. D., and C. F. QUINTARD, M. D. January, 1853.

The New Orleans Monthly Medical Register. Edited by A. Foster Axson, M. D. January, February, March, 1853.

The Stethoscope and Virginia Medical Gazette. Edited by P. C. Gooch, M. D. January, February, March, 1853.

The American Journal of Dental Science. Edited by Chapin A. Harris, M. D., D. D. S., and Alfred A. Blandy, M. D., D. D. S. January, 1853.

The New York Journal of Pharmacy. Published by authority of the College of Pharmacy of the City of New York. Edited by Benj. W. McCready, M. D., Professor of Materia Medica, &c. January, February, March, 1853.

The Western Lancet. Edited by L. M. Lawson, M. D. January, February, March, 1853.

Charleston Medical Journal and Review. Edited by D. J. Cain, M. D., and F. P. Porcher, M. D. January, 1853.

The New Hampshire Journal of Medicine. Edited by E. H. Parker, M. D. January, February, 1853.

Nashville Journal of Medicine and Surgery. Edited by W. K. Bowling, M. D., and Paul F. Eve, M. D. February, 1853.

St. Louis Medical and Surgical Journal. Edited by Drs. Lenton, and McPheeters. February, 1853.

The New Jersey Medical Reporter and Transactions of the New Jersey Medical Society. Edited by Joseph Parrish, M. D. February, March, 1853.

The Western Journal of Medicine and Surgery. Edited by L. P. Yandell, M. D., and Theo. S. Bell, M. D. January, February, 1853.

Transylvania Medical Journal. Edited by L. J. Frazee, M. D. January, 1853.

Annals of Science. Conducted by Hamilton L. Smith, A. M. January, February, March, 1853.

Communications intended for publication, and Books for Review, should be sent, *free of expense*, directed to Isaac Hays, M. D., Editor of the American Journal of the Medical Sciences, care of Messrs. Blanchard & Lea, Philadelphia. Parcels directed as above, and (carriage paid) under cover, to John Miller, Henrietta Street, Covent Garden, *London;* or to John Wiley or G. P. Putnam, *New York;* or W. D. Ticknor, *Boston;* or M. Hector Bossange, Lib. quai Voltaire, No. 11, *Paris*, will reach us safely and without delay. We particularly request the attention of our foreign correspondents to the above, as we are often subjected to unnecessary expense for postage and carriage.

All remittances of money, and letters on the *business* of the Journal, should be addressed *exclusively* to the publishers, Messrs. Blanchard & Lea.

☞ The advertisement-sheet belongs to the business department of the Journal, and all communications for it should be made to the publishers.

ERRATA.

Page 116, lines 12 and 16 from the bottom, for cirrhus read *cirrhosis*.

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XIV. Atlas of Pathological Histology. By Dr. Gottlieb Gluge, Professor of Physiology and Pathological Anatomy in the University of Brussels, etc. Translated from the German by Joseph Leidy, M. D., Pathologist to St. Joseph's Hospital, Philadelphia, Fellow of the College of Physicians, etc. etc. With three hundred and twenty figures, plain and coloured, on twelve copperplate engravings. Philadelphia, Blanchard & Lea, 1853: folio, pp. 100. - - - - - - - 425

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XVII. An Introduction to Clinical Medicine. Six Lectures on the Method of Examining Patients, Percussion, Auscultation, the Use of the Microscope, and the Diagnosis of Skin Diseases. By John Hughes Bennett, M. D., F. R. S. E., &c., 2d ed., with wood-cuts. Edinburgh and London, 1853: 12mo. pp. 134 - - - - - - - - - 432

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XIX. The Nature, Symptoms, and Treatment of Consumption. Being the Essay to which was awarded the Fothergillian Gold Medal of the Medical Society of London. By Richard Payne Cotton, M. D., &c. &c. London: 8vo. pp. 286. - - - - - - - - - 436

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XXI. An Inquiry how far Consumption is Curable: with Observations on the Treatment, and on the Use of Cod-Liver Oil and other Remedies; with Cases. By James Turnbull, M. D., Physician to the Liverpool Infirmary, &c. &c. Second ed., enlarged. London: Churchill, 1850: 8vo. pp. 106. - - - - - - - - - 441

XXII.—Recherches sur les Calculs de la Vessie, et sur leur Analyse Micro-Chimique. Thèse pour le Doctorat en Médecine. Presentée et soutenue par Samuel Lee Bigelow, M. D., etc.

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OF THE MEDICAL SCIENCES

FOR APRIL 1853.

ART. I.—*The Spirometer; its Use in detecting Disease of the Lungs.* By WILLIAM PEPPER, M. D., one of the Physicians of the Pennsylvania Hospital.

NOTWITHSTANDING the great degree of perfection now attained in the diagnosis of diseases of the chest, it must still be admitted, even by those most conversant with percussion and auscultation, that these means alone are occasionally inadequate for the detection of incipient phthisis. This is particularly true, too, in regard to disseminated tubercles of both lungs, and where a large portion of the pulmonary tissue yet remains in a healthy condition; under these circumstances, the percussion is but little if at all impaired, and being the same on both sides, can hardly afford any positive indication as to the true nature of the case. The same remark may in a measure be applied to auscultation; for, although a jerking inspiration with prolonged expiration, or a respiratory murmur puerile at one point and feeble at another, may lead us to suspect more or less pulmonary obstruction, it is still true that these signs are occasionally absent when the tubercles are small and equably scattered throughout the lungs. In such cases, the physical signs are frequently less important than the general symptoms, such as slight emaciation and debility, with perhaps more or less difficulty of breathing under slight exercise, or an occasional dry cough with some frequency of pulse; and these symptoms are entitled to the greatest consideration when occurring in one predisposed to phthisis, and particularly so if preceded by an attack of hæmoptysis.

By a careful combination of the general and local signs in connection with the previous history, a correct diagnosis can no doubt generally be made; but, for reasons already mentioned, there will be an occasional case in which these

means may fail; and it is precisely under such circumstances that the spirometer is by some supposed to afford important aid. Dr. Hutchinson, in his elaborate report upon this subject (*Med.-Chir. Transactions*, vol. xxix.), mentions several very interesting cases in which he was enabled to predict the existence of pulmonary tubercles by means of the spirometer long before any of the usual signs could be detected; he also alludes to several instances where by aid of the same instrument he formed a correct diagnosis, and foretold the recovery of patients who had been considered by competent judges hopelessly ill of consumption; and from his large experience concludes that it is a precise, easy, and safe method of detecting disease of the lungs. His experiments, however, were more especially confined to healthy individuals; and, after patiently investigating more than 2000 cases, he has been enabled to deduce certain general rules by which the healthy standard of any given person may at once be estimated. Thus he found that, for every inch in height over five feet, the *vital capacity*, or amount of air expired after a forcible inspiration, was increased eight cubic inches, so that a person of six feet in height should have a capacity ninety-six inches more than one of only five feet. This conclusion appears the more remarkable from the well-known fact that the difference of height depends rather upon length of the lower extremities than of the trunk—the sitting height of most men (between five and six feet) being on an average about three feet. But what appears most to influence vital capacity is the mobility of the chest—as indicated by the difference between its circumference during forced inspiration and expiration—the average in healthy individuals being about three inches. A small chest having a large mobility will also have a larger vital capacity than one of much greater dimensions, and where the respiratory movements are imperfectly performed; hence, where the chest is much loaded with fat, its movements are embarrassed, and the capacity, consequently, diminished. Dr. Hutchinson found that, for every additional pound in weight from about 150 up to 155, the vital capacity was increased one cubic inch, but that from beyond this point it appeared to decrease in about the same proportion with any augmentation in weight. This rule, however, has reference to a fixed height of five feet six inches, and could only be applied to those of greater stature by first ascertaining the difference of weight in relation to height; this he found to be about five pounds for every inch, so that a man five feet six inches, weighing 150 pounds, an equivalent weight for one five feet eleven inches would be about 175 pounds; consequently up to this point his vital capacity should increase, whilst beyond it, it would diminish one cubic inch for every additional pound.

Age also appears to exercise an important influence: thus, it was ascertained, that the vital capacity increased from the fifteenth up to the thirtieth year, but that from this time it decreased at the rate of one and a half cubic inches for every additional year.

The average vital capacity in individuals aged about thirty, and weighing

about 150 pounds, being 225 cubic inches, it appears reasonable to conclude that anything far short of this standard, and not explicable by the above-mentioned modifying circumstances, may be ascribed to some pathological condition either of the respiratory organs or abdominal viscera; the exact character, however, of the morbid condition could only be ascertained by a careful examination of the physical signs and general symptoms, since the diminished vital capacity might depend upon bronchitis, pleurisy, emphysema, chronic pneumonia, or tubercles. In like manner, an enlarged spleen or liver, an inflammation of the peritoneum or an effusion into its cavity would, by preventing the descent of the diaphragm, necessarily interfere more or less with the respiratory movements. How far the mobility of the chest, and consequently its capacity may be diminished by mere debility or want of muscular power, is a question of great importance in estimating the value of the spirometer; for, should it be ascertained that the vital capacity is in proportion to or even greatly influenced by the mere strength of the individual, it is evident that much caution should be exercised in the adoption of any indications afforded by this instrument as to the existence of pulmonary disease, since it is well known that deficiency of muscular power is by no means incompatible with general good health or perfect integrity of the different organs. Dr. Hutchinson, in alluding to the great power necessary for overcoming the elasticity of the ribs and lungs during forcible inspiration, states: "It is possible that the cachectic condition, in this early stage of the disease (tubercular phthisis), may disable the patient to overcome this resistance, and therefore the vital capacity become diminished by mere want of muscular power." The respiratory power is clearly proved by the same author to be much less in diseased than in healthy individuals, as might have been expected, because weakness is the most prominent symptom of disease; occupation also appeared to exercise an important influence in this respect, and hence the respiratory muscles were found to be more powerful in seamen, firemen, draymen, wrestlers, glassblowers, and trumpeters, than in gentlemen, compositors, and those who led sedentary lives. The difference, however, was not so manifest in the inspiratory as in the expiratory efforts, owing to the fact that the muscles concerned in the former were most frequently brought into play in many of the ordinary avocations of life.

The above conclusions, the result of direct experiment, are certainly in strict conformity with what might have been anticipated by mere reflection upon the subject; for, whilst it appears reasonable to suppose that healthy men, having the same physical development, should be possessed of a like vital capacity, it is also equally apparent that the well-developed man, in the prime of life, and engaged in some active pursuit, should have greater capacity than the one who is small, feeble, or of sedentary habits. Supposing that by the above rules the healthy standard of an individual could be ascertained, it certainly appears probable that any marked deficiency in this respect might fairly be

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ascribed to disease; at the same time, it is important that the strength of the patient should be taken into the calculation, and that a reasonable allowance should be made when this is defective. In the *Medical Examiner*, vol. viii. p. 51, are some remarks by Prof. Jackson on the spirometer, in the course of which, he states it as his opinion that it is muscular power, and not height, that governs the vital capacity; and this view appears in a measure to be sustained by the fact that in those pursuits which are best calculated for the development of the respiratory muscles, we also find the greatest capacity. With the view of testing this, as also several other points of interest in connection with this subject, I was induced to use the spirometer in a variety of pulmonary affections that came under my notice in the wards of the hospital during the spring of 1852; at the same time, the vital capacity of healthy individuals was obtained, as also that of several suffering with cardiac disease, and of others convalescing from acute affections, so that I might be enabled to form a comparative estimate in these different cases. The instrument used was made after the plan recommended by Mr. McEuen; consisting of a cylinder containing water, into which another cylinder is inverted, this latter being counterpoised by a weight attached to a cord, and also having a small aperture to which is adapted a movable piece of metal, so as to allow the escape of air when the cylinder is depressed. The cord passes over a wheel about one foot in diameter, which rotates as the cylinder ascends from the pressure of the expired air, and points out by means of a scale and index the number of cubic inches introduced. The person using the instrument, after a forcible inspiration, expires through a flexible tube which communicates with the lower part of the inverted cylinder.

	Circumference.	Height.	Weight.	Mobility.	Vital capacity.	Occupation.	Age.
1	28	5.6	120	$2\frac{3}{4}$	160	Physician	45
2	32	$5.7\frac{3}{4}$	131	2	225	Seaman	41
3	37	5.4	145	4	270	"	24
4	$37\frac{1}{2}$	5.9	180	4	210	Physician	42
5	34	$5.5\frac{1}{2}$	128	4	230	Seaman	21
6	38	$5.10\frac{1}{2}$	$202\frac{1}{2}$	4	270	"	27
7	36	5.6	141	$3\frac{1}{2}$	230	"	19
8	32	$5.6\frac{1}{2}$	134	4	210	"	22
9	35	5.8	$153\frac{1}{2}$	4	230	"	36
10	35	5.8	161	5	250	"	24
11	38	5.10	$169\frac{1}{2}$	$2\frac{1}{2}$	270	"	28
12	36	5.8	160	$3\frac{1}{2}$	180	"	23
13	34	$5.8\frac{1}{2}$	151	3	250	Physician	21
14	33	5.7	122	$3\frac{1}{2}$	250	Labourer	23
15	32	$5.7\frac{3}{4}$	123	2	210	Watch-case maker	23
16	$37\frac{1}{2}$	$5.10\frac{1}{4}$	165	$3\frac{1}{2}$	200	Seaman	45
17	32	5.5	124	$2\frac{1}{2}$	220	Turner	18
18	33	6.	151	3	230	Moulder	19
19	34	5.10	$147\frac{3}{4}$	4	250	Physician	24
20	32	5.10	144	3	225	"	23
Mean	$34\frac{1}{3}$	5.8	148	$3\frac{1}{3}$	228		27

All the persons referred to in this table were in good health, and it will be perceived that the mean vital capacity, as also the circumference and mobility of the chest, are unusually great, whilst at the same time the average height is only five feet six inches; inasmuch as three-fourths of them were seamen, or persons engaged in some active pursuit calculated to invigorate the respiratory muscles, it appears reasonable to conclude that their large vital capacity depended in a measure upon this cause. On the other hand, when we come to examine the individual cases, it will be perceived that the greatest capacity frequently coincided with the greatest height; thus Nos. 6 and 11 had a capacity of 270 cubic inches and a height of five feet ten inches; so it is with Nos. 10 and 13, who were fully five feet eight, and had a capacity of 250. Nos. 3 and 18, however, present very striking exceptions to this rule, the former, with a capacity of 270, being only five feet four inches high, whilst the latter, although six feet, had but a capacity of 230; it is important, however, to bear in mind that the first named had a circumference of thirty-seven and a mobility of four inches, and that at the same time he was a man of unusual muscular development, whereas the second had but a circumference of thirty-three and a mobility of three. The above table also presents several other points of interest, but the number of persons referred to is perhaps too small to enable us to generalize from them.

With the view of still further ascertaining the influence of strength upon vital capacity, the spirometer was used by several persons just convalescing from severe illness; and who, consequently, were more or less feeble, though free from all pulmonary or other disease.

	Circumference.	Height.	Weight.	Mobility.	Vital capacity.	Occupation.	Age.	Convalescent from
1	32	5.7	108	$4\frac{1}{2}$	120	Labourer	21	Typhoid fever.
2	32	5.9	121	3	220	Seaman	22	" "
3	35	$5.8\frac{1}{2}$	137	4	190	Labourer	34	" "
4	32	$5.5\frac{3}{4}$	$103\frac{1}{2}$	3	210	Waiter	25	Hæmaturia.
5	33	5.4	115	$2\frac{1}{2}$	130	Weaver	30	Acute rheumatism.
Mean	33	5.6	117	$3\frac{2}{5}$	174		26	

As far as the limited number of cases in the above table can prove anything, they certainly go to show that mere debility may very materially diminish vital capacity; the mean being but 174, or about 40 cubic inches less than when the strength is unimpaired. It should be observed, however, that the weight was also below par.

As the amount of air drawn into the lungs by forced inspiration must necessarily be more or less influenced by whatever tends to obstruct or diminish the size of the bronchial tubes, it appears reasonable to conclude that the vital capacity would be impaired in bronchitis, or mere congestion of the bronchial mucous membrane. The following cases were selected to test this point:—

	Circumference.	Height.	Weight.	Mobility.	Vital capacity.	Occupation.	Age.	Disease.
1	36	5.5	131	4	230	Weaver	40	Chronic bronchitis.
2	34	5.4¾	127	5	190	Seaman	30	Acute "
3	35	5.7¼	140	4	200	"	28	" "
Mean	35	5.6	132	4⅓	206		32	

The first case was of four months' duration, and was attended with sonorous and mucous râles throughout the posterior parts of both lungs; the general health and strength, however, were but little if at all impaired. Under the use of the balsam of copaiva, he rapidly improved, and was discharged well about one month after admission. The second came into the hospital suffering with jaundice, and the bronchial affection supervened whilst in the institution. He was somewhat oppressed, and sonorous and sibilant râles could be heard throughout both lungs, but more especially on the right side. Expectoration muco-puriform, prostration slight. The last case was recent, and unattended by marked constitutional disturbance. The usual râles existed in the posterior part of the lungs to a considerable extent. When we consider that one of these patients was more or less exhausted by previous disease, and that two of them were below the average height and weight, it would appear that their vital capacity was scarcely diminished by the bronchial affection; this result is contrary to what might have been anticipated, and is probably owing to the circumstance of the inflammation not having extended to the minute bronchial tubes.

In cases of cardiac disease, it is well known that the lungs frequently become congested, giving rise to asthma, pulmonary apoplexy, or œdema; and it, therefore, appeared of some interest to ascertain how far the vital capacity might be diminished under such circumstances. With this view, the following cases were selected :—

	Circumference.	Height.	Weight.	Mobility.	Vital capacity.	Occupation.	Age.	Disease.
1	33	5.4½	131	2¾	130	Seaman	39	Hypertrophy with disease of aortic valves.
2	33	5.7¼	136½	2½	160	Coachman	27	Hypertrophy with disease of mitral valves.
3	36½	5.9¾	176	2¾	100	Well-digger	39	Slight hypertrophy with disease of aorta.
Mean	34	5.6	148	2⅔	130		35	

In the first, there was extensive dulness on percussion over the cardiac region, with increased impulse, and a harsh, bellows sound, heard more distinctly along the aorta than over the apex of the heart. He was somewhat oppressed upon taking exercise, but had no dropsy, nor was his strength impaired. His disease was attributed to an injury received two months before admission. In the second, the dulness of the cardiac region was also very

great, and this part of the chest was slightly bulging; a double bellows, or saw sound, was heard over the same extent, but was most marked over the apex of the heart; the impulse of the heart was also much increased. The disease could be distinctly traced to a rheumatic attack with which the patient had suffered the previous year. In the last, there was œdema of the lower extremities, and considerable oppression; the respiratory murmur at the lower part of both lungs was in a measure marked by a subcrepitant râle, most probably the result of pulmonary œdema. Over the heart a distant rasping sound could be heard, but this was much louder over the sternum and in the course of the aorta. The disease was probably induced by intemperance and hard work.

In the first two cases, it will be perceived that the vital capacity and mobility are greatly diminished, and yet in neither of them was there any sign indicative of pulmonary disease. In the last case, however, the œdema of the lungs fully accounts for the imperfect respiratory movements. Judging from the above results, it would appear not improbable that extensive cardiac disease tends to diminish vital capacity—the average in these cases being only 130, or 95 less than in health. The mere debility was not sufficient to account for so great a deficiency.

Dr. Hutchinson refers to a case in which the pleuræ were adherent throughout, without having interfered with the mobility or capacity of the chest; and, from this single instance, is disposed to conclude (contrary to the generally received opinion) that freedom of respiratory movement is not prevented by such adhesions. He does not, however, state the character of the adhesions, whether loose and cellular, or firm and cartilaginous, or as the result of acute or chronic inflammation. And yet these distinctions are important; since, in the former, we can readily understand that the thoracic movements are but little impeded; whereas, in the latter, the contrary must necessarily pertain. The four cases of pleurisy referred to below may not prove uninteresting, as showing the influence of this disease upon vital capacity.

	Circumference.	Height.	Weight.	Mobility.	Vital capacity.	Occupation.	Age.	Disease.
1	30	5.1	104	2½	100	Cook	24	Chronic pleurisy.
2	35	5.4½	134	4	140	Stonemason	31	Pleuritic effusion.
3	29	5.4	113	2	120	Domestic	36	Adhesions of pleuræ.
4	33½	5.7½	133	2½	170	Brickmaker	27	Pleuritic effusion.
Mean	32	5.4	121	2¾	132		29	

The first was that of a female who entered the hospital January, 1852, with pleuritic effusion of left side, as indicated by dulness of percussion, slight prominence, feebleness of respiration, and ægophonic resonance of the voice. The spirometer was not used in her case until March, when the above result was obtained; by this time, however, the effusion had in a great measure disap-

peared, but the side still remained flat and contracted, and the respiration feeble. About the middle of the month following (April), she was again seized with pleurisy of the right side, and attended by the usual signs indicative of effusion; at this time, the spirometer was once more used, and showed a loss of forty cubic inches since the first observation—her vital capacity now being only sixty; the mobility was also reduced to two inches, but at the same time her strength had improved, and she had gained seven pounds in weight. It will thus be perceived that both capacity and mobility were considerably diminished by old adhesions of the pleura, and that they were still further impaired by a moderate effusion on the opposite side. These results could not be ascribed to pain, since the patient was not suffering at the time the instrument was used. In the second, the disease was of three weeks' standing, and was evidently attended with considerable effusion into the right pleural cavity, as manifested by slight bulging at the lower part of the thorax—the respiratory murmur being inaudible at this part, but supplementary throughout the sound side—and also by dulness of percussion, which could be varied by changing the position of the patient. Here again the capacity was below the natural standard, as might have been anticipated from the pressure of the fluid upon the lung. His strength was but little impaired, and his occupation was well calculated to develop the muscular system. The third case was that of a female who had suffered with occasional stitches of the left side for several weeks before admission; the lower two-thirds of left thorax were dull and motionless, and the respiratory murmur was greatly diminished over the same extent; in the axillary region, however, there was a distinct friction-sound. No signs of tubercular deposit could be detected, and at the end of one month she left the hospital perfectly well. In this instance, the low vital capacity may fairly be attributed to pleuritic adhesions. The fourth and last case entered the hospital in May, having some weeks previously experienced severe pain of the left side; his strength, however, was not much reduced at the time of admission. Over the lower half of left thorax the vesicular murmur was scarcely audible; at this part, the percussion was also flat, and its extent could be varied by changing the position of the patient; he experienced slight difficulty of breathing upon taking exercise, but had neither cough nor expectoration. By the end of one month he had gained six pounds in weight, and most of the physical signs indicative of effusion had disappeared; the spirometer now showed a gain of thirty cubic inches in his vital capacity. In this instance, it is evident that the capacity was at first diminished by the effusion, and that it gradually improved as absorption went on; the remaining deficiency was probably due to the consequent pleuritic adhesions.

It is, however, especially in phthisis that the spirometer has been considered most useful in forming a correct diagnosis; and allusion has already been made to the opinions of Dr. Hutchinson upon this subject. According to this author, the disease may be detected in its very incipiency by the aid of this instrument, since a very small deposition of tuberculous matter will

cause a considerable deficiency in the vital capacity. In confirmation of this opinion, he mentions the case of a young man who presented all the appearances of full health, but whose vital capacity was forty-seven cubic inches below the healthy standard; one week after using the spirometer, he had an opportunity of examining the lungs, and "found the left lung at the apex studded with miliary tubercles; the whole not extending beyond a square inch, the entire remaining portion being to all appearance healthy:" at the same time, he admits that it is difficult to comprehend why it is that the difference of the vital capacity should be so great when the organic disease is apparently so little. That so limited a tubercular deposit as that just alluded to should *per se* very materially interfere with the vital capacity is indeed quite inconceivable; and it is by no means improbable that the deficiency might in a great measure have been owing to some modifying influence which escaped the observer's attention. In a subject so complex, and where the results are so readily influenced by slight and perhaps inappreciable causes, we cannot be too careful how we generalize from a single fact; at the same time, I am by no means disposed to disparage the utility of the spirometer for the detection of some of the latent forms of phthisis, and particularly when the tubercles are numerous, and yet so disseminated as to give rise to but few if any marked physical signs. Under such circumstances, it is quite conceivable that the vital capacity might be greatly impaired; and when such deficiency could not be accounted for on the score of debility, bronchitis, pleurisy, or other disease, it might fairly be ascribed to the presence of tubercle. Moreover, even in those cases where both auscultation and percussion fully reveal the true nature of the case, they may not always point out the full extent of the disease, owing to the circumstance of a large portion of the lungs still being permeable to the air, and, consequently, not affording a good conducting medium. Most practitioners must have met with instances in which an examination *post mortem* showed a far greater amount of tubercular deposit than had been indicated by the physical signs; and it is highly probable that under such circumstances our prognosis as to the duration of life would have been more correct had the indications afforded by the spirometer entered into the calculation, since in all probability the vital capacity would have been found far below what might have been anticipated from the mere physical signs or other accompanying circumstances. Although, as a general rule, it may be true that the more the lungs are obstructed by tubercles the less will be their capacity, still, it will occasionally happen that, even when the physical signs afford unequivocal evidence of considerable local disease, the vital capacity will be but little below the healthy standard—not more perhaps than could be fully explained by the accompanying debility. But, before proceeding further, let us examine the general result obtained from the use of the spirometer in the various stages of phthisis; with this view, the following cases have been arranged in the tabular form, whilst at the same time a brief note of the stethoscopic indications will be appended, so that the reader, by referring to

the corresponding numbers, may at once be enabled to see the pathological condition of the lungs (as revealed by the physical signs) in connection with the vital capacity.

	Circumference.	Height.	Weight.	Mobility.	Vital capacity.	Occupation.	Age.
CONFIRMED OR ADVANCED PHTHISIS.							
1	33	5.10½	140	2	150	Stonemason	30
2	33	5.6	126½	2½	140	Weaver	38
3	36	5.9½	148	3½	150	Blacksmith	22
4	33½	5.7¾	127	3	190	Porter	22
5	33½	5.6½	133	3	180	Seaman	54
6	32	5.6½	140	2	135	"	21
7	31½	5 3	110	2	110	Domestic	22
8	34	5.6	114½	2½	110	Hod-carrier	33
9	31½	5.7	113½	3	140	Harness-maker	52
10	31	5.4	101	1	80	Seaman	54
11	31	5.3	113	2	50	"	38
12	33	5.8	132	2½	110	Stonecutter	22
13	35	5.7½	135	2½	135	Shoemaker	35
14	31	5.4½	113	2	90	Printer	18
15	30½	5.4	114	2½	80	Labourer	18
16	26	4.6	61½	1½	40	Domestic	14
17	34	5.5½	128½	2	130	Seaman	45
18	32	5.7	148	2	80	Labourer	25
19	31	5.6	106	2	120	Silversmith	40
20	32	5.7	139	2	80	Labourer	25
21	31	5.4¾	96	2½	100	Harness-maker	41
22	31½	5.8¾	116	3	100	Seaman	41
23	34	5.6	113	2½	80	Hod-carrier	33
Mean	32	5.6	120	2¼	112		32
INCIPIENT PHTHISIS.							
24	34	5.7	146	3½	220	Boatman	21
25	36	5.8	144	2	160	Farmer	26
26	36	5.7½	150	4	150	Carter	48
27	31½	5.10½	128	3	140	Plumber	18
Mean	34	5.8	142	3	167		28

1. Had cough for five months, with occasional attacks of hæmoptysis; at time of admission, he was pale, thin, and feeble, and suffered with hectic fever. Percussion flat under left clavicle, with cavernous respiration, gurgling, and pectoriloquism; right lung apparently healthy.

2. Never had hæmoptysis, but has had cough for eighteen months with puriform expectoration, emaciation, and slight hectic fever. Percussion dull under right clavicle, with bronchial respiration and some vocal resonance; prolonged expiration under left clavicle, with crackling.

3. Several of his family have died of consumption, and he has had two attacks of hæmoptysis, followed by cough, puriform expectoration, and hectic fever. Feebleness of respiration with slight mucous râle at summit of left

lung, both behind and in front, but without dulness of percussion or bronchial respiration.

4. Cough for six months preceded by hæmoptysis, but was neither emaciated nor feeble. Expectoration puriform, but without marked hectic. Feebleness of respiration, with dulness on percussion and crackling at summit of left lung; jerking inspiration under right clavicle.

5. This patient was pale and emaciated, but had no hectic fever at time of admission; he had dry cough for two years, during which time he had one or two attacks of hæmoptysis. At summit of right lung, both in front and behind, the respiration was bronchial, whilst under the left clavicle it was feeble, and the percussion dull.

6. His mother had died in a rapid consumption; he had been troubled with cough for about four months, but never had hæmoptysis; at time of admission, he was pale, though not much emaciated, and had hectic fever every evening. Dulness on percussion with *bruit de pot fêlé* under left clavicle, as also gurgling and pectoriloquism. Jerking inspiration and prolonged expiration under right clavicle. Expectoration nummular, ℥iv per diem.

7. She had suffered with spasmodic cough for about one year; was pale and feeble, and had copious purulent expectoration with hectic fever. Catamenia ceased for the last six months. Want of mobility under left clavicle, with flat percussion, *bruit de pot fêlé*, gurgling and cavernous respiration. No marked physical signs on the right side.

8. The disease commenced with the usual symptoms of bronchitis; but these were soon succeeded by hæmoptysis, hectic fever, and more or less prostration. When tested by the spirometer, there was dulness on percussion with feebleness of respiration and crackling under the left clavicle, whilst throughout the same side there was considerable mucous râle.

9. States that he has had cough for six months, followed by a severe attack of hæmoptysis; he also had profuse night-sweats and purulent expectoration. Feeble respiration with crackling under right clavicle, as also above spine of scapula of same side, with dulness on percussion and blowing respiration at summit of right lung.

10. This man was admitted with pleurisy of right side, attended with the usual signs of extensive effusion; hectic fever soon set in, and was followed by puriform expectoration, great emaciation and prostration; he also had chronic laryngitis. When tested by the spirometer, he presented the following signs: right side of thorax contracted and perfectly flat on percussion, with feebleness of respiration and slight vocal resonance, particularly about the root of the lung. Under the clavicle of same side, the percussion was dull, and the respiration feeble and more or less obscured by mucous râle. Chronic pleurisy with probable tubercular deposit.

11. States that he has had cough for fully nine years, and that several of his family had died of consumption. When he entered the hospital, his feet and legs were much swollen; he also had hectic fever, and was considerably

emaciated. Amphoric respiration under right clavicle, with *bruit de pot fêlé*, and dulness extending down to nipple. Under the use of cod-liver oil, he gained twelve pounds of flesh in the course of forty days, but the vital capacity and physical signs remained much the same as at first report.

12. Eighteen months previous to admission, he had an attack of pneumonia, since when the cough has continued, with hectic fever, purulent expectoration, and an occasional hæmoptysis. Crackling under both clavicles, with prolonged expiratory murmur, and some dulness on percussion. Strength moderate.

13. Suffered with chronic laryngitis for the last four months; several years ago he had a hemorrhage from the lungs, amounting to about one pint; since when he has had hectic fever and occasional night-sweats. At time of admission, he was thin but not emaciated, nor was his strength much impaired. Short jerking respiration under left clavicle, with dulness on percussion above spine of scapula of same side. Right lung apparently healthy. Sputa about ℥iij.

14. This patient has suffered with cough and anasarca for four months previous to admission, and had lost flesh and strength. Expectoration puriform, and he also had occasional hectic paroxysms. One of his family had died of phthisis. Crackling under left clavicle with prolonged expiration; dulness and depression of left infra-clavicular region.

15. He was somewhat emaciated and feeble, and had night-sweats, with cough for four months before admission. Dulness at summit of left lung, with feeble respiration and crackling, and prolonged expiration under right clavicle. Mucous râle throughout left lung behind. Sputa ℥iv. Under the use of cod-liver oil, he improved in flesh and strength, and was again tested by the spirometer about one month after the result in the above table had been obtained; he could now blow ninety, showing a gain of ten cubic inches.

16. She had slight hæmoptysis about four months before admission, and this was followed by cough and diarrhœa; she was pale and thin, but not very feeble. There was great fulness of the epigastric region, evidently depending upon an enlargement of the liver. Flatness and crackling at summit of left lung; right lung apparently healthy.

17. This patient had syphilis about three years ago, since when he had complained of sore throat; for the last four months, cough, hectic fever, and emaciation have supervened. Copious puriform expectoration. Lower two-thirds of right thorax flat and bulging, with feeble murmur over same extent; percussion dull under left clavicle, with *bruit de pot fêlé*, gurgling, and cavernous respiration. By the end of one month, the effusion into the right pleura had entirely disappeared, and, under the use of cod-liver oil, he had also gained flesh and strength; the physical signs, however, showed that the disease of the left lung had increased, and, when again tested by the spirometer, it was found that his vital capacity had diminished ten cubic inches. About this time he was seized with acute dysentery, which soon proved fatal. An examination

post mortem revealed extensive pleuritic adhesions of right side, and a large vomica at summit of left lung, in connection with numerous tubercles of both sides.

18. Cough for six months, but without hereditary predisposition to phthisis, and never had hæmoptysis; he attributed his sickness to an inflammation of the lung contracted several weeks before admission. Dulness on percussion, with bronchial respiration and bronchophony under right clavicle, with more or less subcrepitant râle and dulness throughout same lung; sputa slightly rusty; supplementary respiration on left side. After one month's residence in the hospital, his sputa became puriform, and under the right clavicle could now be detected amphoric respiration, pectoriloquism, *bruit de pot fêlé*, and metallic tinkling; the spirometer, however, gave the same result as stated in the table. Chronic pneumonia probably ending in tubercular deposit and ulceration.

19. Stated that he had cough for four years, but that it had become particularly troublesome for three months previous to his admission, during which time he had lost 20 pounds in weight. Hectic fever, huskiness of voice, and purulent expectoration. His mother had died of consumption. Cavernous respiration and gurgling, with flat percussion and want of mobility under the left clavicle. Bronchial respiration and jerking inspiration at summit of right lung.

20. Cough of three months' duration, with copious puriform expectoration and hectic fever. He ascribes his disease to exposure. Dull percussion and cavernous respiration, with gurgling and great vocal resonance under right clavicle, as also at upper part of same lung behind; left lung comparatively healthy, but the respiration was puerile on this side.

21. Stated that he had more or less dry cough for four or five years, but that he never had hæmoptysis. Four months before admission, he commenced to emaciate, and during that time he had lost fifty pounds in weight. Upon slight exercise, he became oppressed, and had some œdema of feet. Well-marked signs of large vomica below right clavicle, such as metallic tinkling, amphoric respiration, and tympanitic percussion; dulness and prolonged expiration under the left. Purulent expectoration about ℥viij per diem.

22. Never had hæmoptysis, but has been troubled with cough for about eleven months; and, at time of admission, was emaciated and feeble; sputa fetid and nummular. He had lost a sister of consumption. Want of motion under right clavicle, with flat percussion, cavernous respiration, and gurgling. The same signs could even be detected behind at summit of lung. Under the left clavicle the respiration was rude, but without dulness on percussion.

23. Cough for seven months, which could be traced to an attack of pleurisy. None of his family had died of consumption, nor had he ever had hæmoptysis. He was emaciated and feeble; expectoration purulent. Crackling and sonorous râle, with absence of respiratory murmur under left clavicle; mucous râles

throughout same side; right lung comparatively healthy, but deep inspiration developed slight crackling under the clavicle.

24. This man entered the hospital with a slight laryngitis, for several months previous to which time he had been somewhat troubled with cough; his strength and general appearance were, however, but little impaired. His mother had died of phthisis. Slight dulness, with jerking inspiration and prolonged expiratory murmur, were the only physical signs that could be detected. Along the aorta and subclavians there was a distinct musical bellows sound, most probably depending upon anæmia.

25. He entered the hospital with anasarca, unconnected, however, with any appreciable disease of heart, liver, or kidneys; he, moreover, had cough, but without decided hectic. Slight dulness under right clavicle, with feeble respiration, and some crepitant râle above spine of scapula. Left lung apparently healthy.

26. Had cough for seven months, without hectic fever or purulent expectoration; nor was his general health materially impaired, though he was evidently somewhat anæmic. Slight crackling under left clavicle, with prolonged expiration, and obscure dulness of percussion. No physical signs on right side.

27. Pale and somewhat emaciated, with cough for the last two or three months. His mother had died of phthisis; and, upon several occasions, he has had hæmoptysis. At times he had night-sweats, and his expectoration, though but small in quantity, was puriform. Slight dulness of percussion, with feeble respiration and mucous râle under left clavicle; sonorous râles throughout right lung.

The mean vital capacity of twenty-two cases of phthisis, in the early stage, was found by Dr. Hutchinson to be about 159; whereas in nine cases, in the advanced stage, it was but 83 cubic inches. By the above table, it will be perceived that the result was somewhat different; thus, in the advanced stage, the vital capacity was 112, or about one-half the average healthy standard, whilst in the incipient form it was 167; showing a loss of about 85, the mean in healthy persons being considered 225. This apparent discrepancy may no doubt in a great measure depend upon some important difference in the extent of pulmonary disease in the cases tested by the spirometer, and merely referred to by Dr. Hutchinson, under the general heads of *early* and *advanced* stage, and unaccompanied by any notes explanatory of the exact condition of the lungs in each case. The general result, however, in both series, shows that the vital capacity is very greatly impaired in the advanced state of consumption; more so, perhaps, than in most other affections of the chest. Thus, in pleurisy (including both effusion and adhesions) the loss was 93 cubic inches, in bronchitis but 19, and in extensive cardiac disease 95; whereas, in advanced phthisis, as shown by my observations, the loss was 112, or about one-half, and, according to the above-named author, even as great as 137. The only case of well-marked emphysema that came under my notice, at the time of making the present report, had a vital capacity of 95; but in this instance

the health was unimpaired, and the patient weighed 100 pounds, and was only five feet high; so that, according to the rules before mentioned, there was no very great deficiency. In regard to incipient phthisis, or the early stage of this disease, it will be perceived that the mean capacity was 167, or 58 below the healthy average. Dr. Hutchinson, however, in similar cases, found a deficiency of 67; and, taking it for granted that this result is perhaps the most correct (since it is based upon a greater number of observations), it is still evident that other causes than tubercular deposit might produce a like result. We have seen that by mere debility the vital capacity may be lowered about 50 cubic inches; whatever tends to prevent the free descent of the diaphragm, such as a full stomach, enlargement of the liver and spleen, or other abdominal affections, would also necessarily tend to increase this deficiency. Allusion has already been made to the influence exerted by occupation, and various thoracic affections in this respect.

By examining the last table, in connection with the appended notes, it will generally be found, as might have been anticipated, that the lowest vital capacity corresponds with the greatest amount of pulmonary disease. Thus, in Nos. 10, 15, 18, 20, and 23, it was but 80. In the first of these cases, however, much of the deficiency depended upon chronic pleurisy; whilst in the second and last the extensive bronchial complication had much to do with the result. So, on the other hand, the greatest capacity generally occurred where the disease was least extensive; this is true in regard to Nos. 1, 2, 3, 4, and 5, in which the vital capacity ranged from 140 to 190. In the first case, it will be observed that there existed the unequivocal signs of a vomica; it should, however, be stated, that in this instance the disease appeared confined to the upper part of left lung. In No. 24, the first reported under the head of incipient phthisis, it will also be perceived that whilst the vital capacity was but little, if at all, impaired, the physical signs also revealed no considerable amount of disease.

Although the number of cases may be too limited to enable us to arrive at any positive conclusions as to the utility of the spirometer for the detection of pulmonary tubercles, it is still evident, from the above data, that it may occasionally afford material aid in forming a correct diagnosis. Thus, when the vital capacity is relatively large, it is more than probable that no considerable disease of the lungs can exist. So, too, when it is decidedly below par, we may infer that there are tubercles, *provided* the deficiency cannot be accounted for by debility and other conditions or diseases calculated to impair the respiratory movements. And this conclusion may even be received as highly probable, notwithstanding the absence of the usual physical signs; since, as before stated, there are certainly occasional cases in which disseminated tubercles are not positively revealed, either by auscultation or percussion. The instrument, it is true, is both simple and of easy application, but much judgment and discrimination are requisite for the full interpretation of the results. Nor is it always an easy matter to appreciate fully or apportion the

exact influence of the various concomitant circumstances which so much modify the vital capacity; and it is for this reason that we are more liable to be misled by the spirometer than by the stethoscope. How far the rules laid down by Dr. Hutchinson may tend to obviate this difficulty, it remains for further observation to decide.

In drawing up the above report, I was much assisted by the accurate notes furnished by Dr. A. Hewson, Resident Physician; and it at the same time affords me much pleasure to acknowledge his valuable aid in testing the various cases by the spirometer and scale-balance.

ART. II.—*Notes from my Case-Book.* By FLEETWOOD CHURCHILL, M. D., M. R. I. A., Fellow of the King and Queen's College of Physicians, Ireland.

Intestinal Irritation in Childbed.—A kind of feverish attack, occurring in childbed, was epidemic in Dublin in 1851. In the course of six months, eight or ten cases came under my own observation. It was something like "weid," but with a considerable difference; yet it differed still more from any variety of puerperal fever. I cannot even say that it is peculiar to lying-in women, for it does not appear to have any direct connection with, or relation to, the uterine system, but it is apparently a short attack of fever, with gastro-intestinal irritation, occurring at that peculiar time.

Perhaps a sketch of two or three of the cases may render the subject more intelligible.

CASE I.—Mrs. —— was confined of her tenth child in July, 1851. The labour was natural, the lochia and milk secreted amply, and she progressed favourably until the eleventh day. On the morning of that day, on which she was to leave her bed for the first time, before attempting to rise or dress, and without the slightest apparent cause, she was attacked with a rigor followed by heat and sweating. The pulse became quick and remained at about 100. The tongue became furred and white; the bowels flatulent and constipated. The milk, which had been abundant, almost entirely disappeared. The uterus was neither enlarged nor painful, nor was there any tenderness on pressure. The lochia continued natural in character though diminished in quantity. A day or two afterwards, the bowels, which had been freed by medicine, became too much relaxed, accompanied by a most distressing amount of flatulence and frequent griping pain. The pulse very slowly diminished in frequency, and the milk gradually returned. Throughout, the uterus and its secretion were apparently unaffected. On the morning of the eighteenth day the patient appeared much better, nearly convalescent; but, in the course of the day, she had another rigor, followed by fever, which subsided, after twenty-four hours, like an attack of weid. From this time, her convalescence was uninterrupted, though slow, and the milk was ultimately restored to its usual abundance.

Case II.—Mrs. M. was confined of her second child, January 14, 1852, after a favourable labour. The placenta was expelled in a few minutes, and everything went on well until the afternoon of the 16th, when a rigor occurred soon after taking some castor-oil. Soon afterwards, most violent pain in the bowels came on and continued, but increasing in paroxysms. There was considerable tenderness on pressure, but not over the uterus especially. To the rigor, of course, succeeded fever. The skin became hot; the pulse rose to 130, with little or no thirst, but with a total loss of appetite. There was neither nausea nor vomiting, and the bowels were freely moved by the oil. Neither the milk nor the lochia were arrested, except for a few hours. Forty drops of laudanum were given, and thirty more after an hour's interval. A linseed-meal poultice was applied over the entire abdomen. These measures were successful, to a great extent, in the relief of pain, and she obtained some sleep.

January 17. I found that the patient had suffered a good deal of pain occasionally, but the general tenderness had greatly subsided. There was a spot, however, in the left iliac region which was very painful on pressure. The uterine tumour was free from tenderness. The lochia was natural in quantity and appearance, but had a heavy smell. The pulse was 120; the skin hot but moist; some thirst; bowels moved twice. Twelve leeches were applied to the tender spot in the iliac region, and the poultices continued. Vaginal injections of warm milk and water twice a day. Twenty drops of laudanum were given immediately, and a pill of calomel, gr. i, pulv. ipecac. comp. gr. iii, pulv. Jacob. gr. ii, was ordered to be taken thrice a day.

18*th*. Much relieved after the leeching. Pulse 110. Tongue white but not loaded. Very little pain or tenderness except in the left iliac region. Has slept better. Milk abundant. Lochia natural and free from smell. Is much troubled with flatulence. The pills and poultices were continued. Towards evening, notwithstanding the opium she had taken, she had an attack of diarrhœa accompanied with most distressing tenesmus, and burning pain in the rectum, which was not relieved until she had had two enemata with thirty drops of laudanum in each.

19*th*. Some uneasiness in the rectum, but no purging. The iliac tenderness has entirely disappeared. The milk and lochia natural. Pulse 100 in the morning, but it sank to 84 in the evening.

From this time, my patient gained strength, and was no more troubled with pain. The bowels acted naturally, and the appetite was increasing, when, on the seventh day from the first attack, she had a rigor of long duration, followed by heat and sweating, and lasting twenty-four hours, just as in the former case. After this, she recovered very rapidly, and has been well ever since.

Case III.—Mrs. M. was confined about the same time as the last case, under the care of Mr. Morgan. Her labour, which was natural, was followed by smart hemorrhage. About the third day, she was seized with violent pain in the abdomen, increasing in paroxysm to an intense degree. There was no rigor, but the pulse rose to 120, and the skin became hot, but there was no thirst. The breasts were full and the lochia natural. Although the abdomen generally was tender on pressure, there was no peculiar tenderness over the uterus. A full dose of laudanum relieved the pain to a certain extent, and the bowels were freed by medicine. We then applied the mercurial ointment, on lint, over the abdomen, and a poultice over it, and gave small doses of calomel, Dover's powder, and James's powder, three times a day.

The next day she was much better. Pulse 110. Tongue coated. The skin cooler. Some pain and flatulence, with uneasiness on pressure. Milk and lochia natural. The day after, she was attacked with violent diarrhœa and severe pain in the bowels, accompanied with great exhaustion, so that we were obliged to give wine, and had some difficulty in controlling the bowels by means of opiates, astringents, anodyne enemata, &c.

After we had quieted the bowels by these means, and relieved the pain, the pulse continued for some days above the natural standard. In other respects, the convalescence proceeded quite satisfactorily.

Although the foregoing brief cases scarcely give an adequate idea of the attack being so alarming as it really was, yet those engaged in midwifery practice will feel that, coming on so soon after delivery, and commencing with such formidable symptoms, I might be excused for fearing that the issue would be more serious than it proved. The commencement of the attack, in many cases, closely resembled that of puerperal fever, and it was not until after twenty-four hours that I could feel even that we had escaped that pestilence of childbed. Instead of detailing more of the eight or ten cases I witnessed, I will rather occupy the time of the Society in noticing some of the peculiarities of the epidemic.

1. The attack, in all cases but one, occurred within a week after delivery; in one case it came on the second day; in others on the third, fourth, or fifth day. In the exceptional case, it occurred on the eleventh day; and it is worth notice that, for other reasons, this lady had not left her bed up to that time.

In no case could I trace the attack to any special cause, exposure, imprudence, or errors of diet, but there was evidence in some of the cases that the bowels had not been carefully attended to during pregnancy. And perhaps I may be allowed to make a remark for the benefit of my juniors. It may, and not unfrequently does, happen that the bowels may be moved daily during pregnancy, and yet that an accumulation of fecal matter in the large intestines may accumulate to a considerable extent. I remember a case in which I traced the colon across the abdomen by its enormous fecal distension, although the lady had complained of diarrhœa during pregnancy. In such cases, a kind of artificial channel is formed through or on one side of the fecal mass. In all cases, therefore, it is necessary that we should be sure that the bowels are amply freed, and not merely moved.

2. In three cases only did the attack commence with a rigor, and in these it was not very severe but sufficiently well marked. In two cases only was the rigor repeated, and in both at the interval of a week; the second attack lasting twenty-four hours, and resembling weid very exactly.

3. The most striking symptoms in all the cases were the pain and diarrhœa. The former came on rapidly, increasing in paroxysms, and continued until relieved by medicine. It was always general over the whole abdomen whilst severe, but, as it declined, it was felt more in one part than another; I think, most frequently in the left iliac region. After the first severe attack

was relieved, all the patients complained of frequent flatulent pains, with great discharges of flatus. Along with, and in proportion to the amount of pain was the degree of tenderness; but it was remarked that, after the first impression of pain, the pressure, if equal and firm, was rather a relief; also, that the uterine region was less tender than any other part of the abdomen.

It is worth noting, that in no single case did nausea or vomiting occur, but that in all there was diarrhœa, even in those in which the bowels were confined at the commencement of the attack, or in which large doses of opium had been given for the relief of the pain. The amount varied; in some the discharges were few, but large and unhealthy; in others they were very numerous, and followed by great exhaustion.

4. The pulse was invariably quick at first, generally 120, sometimes 140, and gradually subsiding as the distress diminished. In a few cases they continued quick for many days, and excited much uneasiness. Its frequency was accompanied by heat of surface at first, which, however, soon diminished. In most cases there was a good deal of perspiration, and in one or two it was excessive. The absence of thirst was rather remarkable in all cases, except just after the exhibition of opium. The tongue was coated with white fur, but neither loaded nor dry.

5. In every case but one, the secretion of milk was unaffected, the breasts remaining or becoming pale and hard. In the exceptional case, the milk, which had been abundant, was completely suppressed for a time, but ultimately restored.

6. The lochiæ were generally diminished or suppressed for a few hours at first, but they speedily returned, and occasionally had a heavy smell for a day or two, after which they became natural and healthy.

7. I have already mentioned that, in two of the cases, there occurred a repetition of the rigor followed by heat and sweating like an attack of weid.

8. As a general rule, the attack lasted about a week; few were convalescent earlier, and one or two were protracted a few days longer.

9. I need not say that the diagnosis was a matter of extreme anxiety to me, beginning, as the attack did, with so much resemblance to puerperal fever, and presenting such formidable symptoms. However, one thing was clear, that, whatever else I might have to treat, I had undoubtedly to deal with a severe attack of intestinal irritation, as was shown by the pain, its fluctuations in seat, and its paroxysmal character, and which was confirmed by the occurrence of diarrhœa. So far was clear; but then arose the question as to whether there might not exist enteritis or peritonitis, and some support to this view was afforded by the rigor, the quick pulse, and the tenderness; but then the pain was shifting and paroxysmal, which is not generally the case in either, and the tenderness was superficial, and not increased by prolonged pressure. Add to this, that the decided improvement in the course of twenty-four hours negatived such a supposition.

There then only remained the question of how far the uterine system was

involved; and, as I found no particular tenderness over the uterus, and no enlargement of that organ, that the lochia, if modified for a few hours, shortly resumed their natural character, and, lastly, that the secretion of milk was abundant and unchecked, I came to the conclusion that the uterine system was unaffected; that no inflammation existed in the peritoneal serous membrane or in the intestines, but that the attack was one of severe intestinal irritation with accompanying fever from some unexplained cause. In this the stomach did not participate, as neither nausea nor vomiting occurred, and merely that loss of appetite which was necessarily the result of so much disturbance.

10. The treatment was simple enough, and very successful. The first object was to relieve the pain by large, and if necessary repeated doses of opium by the mouth, or by enemata of laudanum and starch, and externally by poultices of linseed-meal alone, or with flour of mustard. When relief was obtained, if the bowels had not been sufficiently moved, I gave a dose of castor-oil, but, had I known that diarrhœa was to follow as it did, I need not have done this. I then, as a safeguard, gave small doses of calomel or gray powder, with Dover's and James's powder, three or four times a day, and, in two or three cases, applied the ung. hydrarg. to the abdomen underneath the poultices. When the attack was more familiar to me, I omitted the mercury, and in all cases left it off when I found the uterus unscathed, but I continued the James's and Dover's powder, and the poultices, until all pain and uneasiness had disappeared.

The flatulence was relieved effectually by camphor mixture, with aromatic spirit of ammonia, compound spirit of ether, and tincture of orange-peel. I kept the patients on low diet at first, of course, and I found it necessary to be very cautious in increasing the nourishment for some time, as a meal was very apt to be followed by pain and flatulence.

ART. III.—*Facts and Observations on the Origin of Yellow Fever from Local Sources of Infection, as illustrated by Occurrences on board of Ships.* By R. LA ROCHE, M.D.

THE annals of the yellow fever in this country, in Europe, and in tropical climates, abound in facts tending to establish beyond the possibility of doubt the local origin of the disease from sources of malarial infection, and its complete independence of a contagious principle or virus emanating from the sick, and transmissible from one individual or place to another, through means of a personal intercourse with these or the indirect agency of fomites. Of such facts none appear better calculated to illustrate the reality of that origin than those derived from the records of the rise and spread of the fever on board of

ships; occurring, as they often have done, under circumstances which forbid the supposition of a foreign or contagious source of contamination, and point to the vessel itself as the focus of infection. That by some writers, more or less entitled to our regard, the spontaneous development of the disease on shipboard from causes of the kind has been denied or strongly doubted;—that attempts have not unfrequently been made to impugn and explain away the many facts adduced in its support, is doubtless true. Faithful to his belief in the doctrine of contagion and importation, Bally, whose intelligence and learning it would be unsafe to question, but whose soundness of judgment no one judging from the course he has pursued in the controversy will feel disposed to commend, boldly affirms that the yellow fever has never originated, in the way mentioned, in ships. According to him, the facts so exultingly cited as demonstrative of spontaneous development are all calculated to excite suspicion. Some of the accounts on record, he thinks, have been transmitted by individuals whose power and accuracy of observation are entitled to little or no confidence; in other instances the vessels had touched at some American ports, and there imbibed the germs of the fever; in others, again, the vessels contained infected merchandise, from which those on board derived the contagion; in another set of cases, the disease observed was nothing more than ordinary ship fever, and not the true typhus icterodes, with which it was improperly confounded; while, in some instances, the effect must be attributed to a revival of the cause in vessels in which the disease had some time before prevailed extensively and been temporarily arrested.[1] In some one of these ways, according to Bally, every case described may be easily disposed of without having recourse to the idea of the fever being the effect of a poison evolved within the ship itself.

Not less certain is it that a still higher authority among contagionists of the purest water, Kéraudren, whose official position as physician-in-chief of the French navy necessarily afforded him ample means of information, may be appealed to, by the opponents of that mode of development, as a warm and intelligent supporter of their views.[2] Nay, among non-contagionists themselves, there are not wanting those who, while admitting the local origin of the yellow fever on shipboard, discard the idea of referring the disease there, or, indeed, anywhere else, to the agency of sources of malarious infection, and have taken special pains to show that it is due to changes of habits, exposure to the sun, sudden vicissitudes of temperature, cold, heat, fatigue, fogs, moral causes, and a variety of other morbid influences of like import.[3]

But however willing we may be to respect the authority of these writers and of others entertaining kindred views;—however true it may be that some

[1] Du Typhus d'Amérique ou Fièvre jaune, pp. 357–8.

[2] De la Fièvre jaune, observée aux Antilles et sur les Vaisseaux du Roi. 8vo. Paris, 1823.

[3] The Influence of Climate and other Agents on the Human Constitution, &c. By Robert Armstrong, M. D. pp. 57, 61, 76, &c.

of the statements on record, and pointed out as illustrative of the mode of origin in question cannot be fully relied upon, that there is reason to believe the disease in some instances to have not been the true yellow fever, and that in others, it was the offspring of extrinsic influences, and not of a cause evolved on board of the infected vessels, still, a careful perusal of the numerous facts we possess on the subject before us, so far from justifying the propriety of discarding as spurious and erroneous all that has been said in support of the malarial origin of the fever on shipboard, will fully sustain the opinion of those who ascribe in very many instances the appearance and spread of the disease in such localities to the operation of morbid effluvia generated in the timber of the vessels themselves or the materials these may contain. Let it not be supposed that the correctness of these conclusions is upheld by none but anti-contagionists. So far from this being the case, they include among their advocates writers who have taken an active part in support of the contrary doctrine, and who, strikingly as the admission conflicts with the views they entertain respecting the usual source of the disease, and impossible as they may find it to reconcile the facts they adduce with the theory they profess on the latter subject, do not hesitate to express their belief in the occasional spontaneous development of the yellow-fever poison on board of ships. Sir Gilbert Blane himself, than whom we scarcely know a more zealous and uncompromising contagionist and importationist, and who, consequently, was too deeply interested in the matter to make an admission in opposition to his recorded views he did not know to be well founded, at the same time that he was too well acquainted with the disease to commit a gross error of diagnosis, remarks that experience has proved that "one of the most prolific sources of foul air and bad smell in ships has been the putrescent matters absorbed and retained by gravel, sand, and other earthy substances heretofore used for ballast." He alludes to those cavities under the floor of the holds, which used to be receptacles of filth and of all manner of vermin, dead and alive, proving perpetual reservoirs and sources of foul air and of offensive and noxious exhalations.[1] In another essay on yellow fever, he more pointedly states that the West Indian fevers "sometimes are found to arise from the foul vapour of ships replete with filth from long neglect of cleanliness;"[2] and in his excellent work on the *Diseases of Seamen*, we are told:—

"With regard to the effect of putrid exhalations, I need only mention that at the time of the battle of the 12th of April, 1782, there was not a sickly ship in our fleet; but many of the officers and men, who were sent to take care of the French prizes, were seized with the yellow fever; and it was observed that when at any time the holds of these ships, which were full of putrid matters, were stirred, there was an evident increase of those fevers soon after." P. 609.

[1] On the Health of the Navy, *Med.-Chir. Trans.* vol. vi. pp. 507, 510. Select Dissertations, vol. i. pp. 36, 38.

[2] Select Dissertations, vol. ii. p. 119.

A distinguished countryman of ours, the late Dr. Currie, of this city, who never could discover the most remote reason to admit that the yellow fever had ever originated in this country, thought that "crowded transports or ships of war, generally, if not always, constituted the original and proper sources of the matter of contagion or the poison of the disease."—(*Diseases of America*, p. 60.) Other admissions, equally conclusive, by contagionists of high authority will be adduced as we proceed, and would alone prove sufficient to counterbalance the doubts and denials to which attention has been called. But even were we unable to support the opinion of the origin of the yellow fever on shipboard from local sources of infection and independently of external influences, by appealing to the testimony of Blane, and other writers who entertain views similar to his own respecting the etiology and mode of propagation of the disease, we should be led to its adoption by a survey of various occurrences on board of government and merchant vessels of this country, England, and France.

Regarding many of these as establishing the reality of that origin beyond the reach of cavil and disputation—considering, besides, that they lend a strong support to the doctrine which ascribes autumnal and other febrile diseases to the agency of specific poisons floating in the atmosphere, and lead to the inference that, on land, the yellow fever, when it breaks out, must likewise be due to effluvia issuing from kindred sources of contamination, and not to the importation of a contagious virus from some distant infected place—I have thought that a condensed account of them, collected from various publications—many of which are now little known or difficult of access—might serve a useful purpose, as affording important materials for the settlement of the long-mooted question of the mode of origin of that formidable disease.

In the performance of this task, attention might perhaps be called to the history of the disease as it prevailed on board the Princess Caroline, at Curaçao, in 1763, as so graphically described by Rouppe;[1] on board of the Majestic, at Port Royal, Martinique, in 1795;[2] of the Ganges;[3] of the Peacock and Grampus;[4] the Sea Island, at Middletown, in 1820;[5] the Polly, at Chatham, Ct., in 1796;[6] the Ten Brothers, at Boston, in 1819;[7] the Favourite and Ocean, at Perth Amboy, in 1811;[8] the various vessels from New Orleans, at

[1] Diseases of Seamen, p. 416.

[2] Gillespie, p. 31.

[3] Cartlet, Med. Repos. vol. iv. p. 243.

[4] Barrington, Am. Journ. of Med. Sci. vol. xii. p. 308.

[5] Beck's Rept. in Hosack on Med. Pol. Essays, vol. ii. p. 65; Tully and Miner's Essays, p. 319.

[6] Tully and Miner, p. 356; see, also, Letter to Dr. Hosack, N. Y. Med. Journ. vol. i. p. 153; Webster on Epidemics, vol. ii. p. 344.

[7] New England Med. Journ. vol. 8; North Am. Rev. vol. x. p. 397; Watt, in Med. and Surg. Reg. p. 226.

[8] Report of Drs. Hosack, Bayley, and Douglass, Med. and Phil. Reg. vol. iii. p. 95; Edinb. Med. and Surg. Journ. vol viii. p. 165.

Staten Island, in 1848;[1] the Bann, at Ascension, in 1823;[2] the Palinure, at Martinique;[3] the Néréide;[4] the Expéditive;[5] the Gloriole;[6] the Eglantine;[7] the Africaine;[8] the Middleburg;[9] the Chichester;[10] the Herminie;[11] the Vestal;[12] the La Ruse and the Grayhound, at the Wallabout, in 1804;[13] the Ann Maria, at the New York Quarantine, in 1821;[14] the Alban, at Port Royal (Jamaica);[15] the Snake, at St. Jago (Cuba);[16] the Tartarus, Crocodile, Dee, Satellite, Hecla, Megæra;[17] and others of which we have the records. But, although the disease, in those instances, very apparently originated on board, yet as in some it commenced while the ships lay at anchor near an unhealthy shore, or in sickly ports, and were hence within reach of external morbific influences; or, in others, a short time after they had left such places; and as, consequently, serious doubts may be entertained, as to the propriety of ascribing it positively to causes evolved on board, the cases in question may be laid aside as inconclusive. For a similar reason, it may, perhaps, be proper to omit adducing, as has been often done, the epidemic which occurred on board the U. S. ship Delaware, in 1799–1800, at Curaçoa, an account of which will be found in an early volume of the *New York Medical Repository.*[18] In this account, Dr. Anderson, while stating that, during the prevalence of the fever, the crew suffered from a highly nauseous smell between decks—which was not the result of effluvia from the accumulation of the sick, as it remained long after they were removed—says nothing of the cause of the disease being in the ship, and seems, even, to attribute it to exhalations from the shore. And yet, from the following statement by the late Dr. Vaughan, of Wilmington (Del.), contained in a letter to Dr. E. Miller, of New York, it would appear that the disease, on that occasion, broke out under circum-

[1] Communication from the Committee appointed to inquire into the propriety of the removal of the Quarantine establishment, p. 14, &c.

[2] Burnett's Report, p. 3, &c.; Blane, Letter to Mr. Croker, N. Y. Journ. vol. iii. p. 173; Thompson, on Anat., &c., ibid. p. 168; Med.-Chir. Journ. and Rev. vol. iv. p. 916; Ibid. N. S. vol. ii. p. 3; Brit. and For. Med.-Chir. Rev. vol. i. p. 62.

[3] Sir G. Blane, vol. ii. p. 141; Dict. des Sci. Méd. vol. xv.; Strobel, p. 19; Palloni, pp. 42, 43; Opinion de M. Lafort, pp. 15, 16; Moreau de Jonnes, p. 121; Chervin Rept. p. 8; Dickson, in Bancroft's Sequel, pp. 172, 173 (note).

[4] Kéraudren, p. 37. [5] Ibid. p. 38. [6] Ibid. p. 40.

[7] Ibid. p. 42. [8] Ibid. p. 42. [9] Lind on Hot Climates, p. 133.

[10] Doughty on Yellow Fever, p. 16.

[11] Maher, Relation de deux épid. de Fièvre jaune.

[12] Wilson, Stat. Rept. of Health of British Squadron, p. 109.

[13] N. Y. Med. Rept. vol. viii. pp. 97, 98; Smith on Epidemics, p. 80.

[14] Hist. of the Proceedings of Board of Health of N. Y. in 1822, pp. 7, 8; Smith on Epidemics, p. 80; Letters on Yellow Fever of 1821, and Rept. of Jos. Bayley thereon, p. 6, &c.; Vaché, Letters on Yellow Fever, &c. p. 8.

[15] Bryson, Stat. Report of the Health of the Navy (Brit.), p. 95.

[16] Ibid. p. 96. [17] Ibid. pp. 101, 106, 121.

[18] An Account of a Bilious Yellow Fever which prevailed in the United States ship Delaware, &c. By S. Anderson.—*Med. Repos.* vol. v. p. 280.

stances which render its origin from local sources of infection on board more than probable. Let the impartial reader judge. In speaking of the ship in question, Dr. V. remarks:—

"Dr. Anderson, of that ship, informed me that the disease unquestionably originated on board, in the harbour of Curaçoa, while the inhabitants of the island were perfectly healthy. As soon as the nature of the disease was known, they put to sea, in hopes of receiving advantage from a free circulation of air; but the sick-list increased daily, and they returned to the harbour of Curaçoa in a much worse condition than they left it. Forty sick were landed; and, though there was no restriction in intercourse with the inhabitants, there was not a single suspicion of contagious influence."[1]

But, whatever uncertainty there may be thought to exist respecting the ship Delaware, there can be none as regards the origin of the disease on board the U. S. frigate General Greene, in 1799. The history of that visitation has often been cited, and must be familiar to many American medical readers. The ship left Newport (R. I.) on the 3d of June, and reached the Havana on the 4th of July. The disease commenced during the passage, and extended rapidly. The crew thus affected had had, to use the language of Dr. Kollock, to whom we are indebted for an account of the occurrence,[2] no communication with any vessel at sea, nor had they touched at any place in their passage, or even had intercourse with the town, or vessels in the harbour, till after the breaking out of the disease. Other vessels in port were no more than usually sickly, and the inhabitants of the island were remarkably healthy. "The principle of disease," continues that writer, "seemed to have been generated on board, and to have gradually acquired virulence and activity as they approached the place of their destination." "Those who frequented the hold, and were stationed in the neighbourhood of the pumps, suffered more especially during the continuance of the disease, as they had been the first attacked by it." It may be remarked that the ship being new, may be supposed to have been in a cleanly condition. But, having been caulked in winter, her seams opened as the warm weather advanced, and her ballast consisted partly of iron, and partly of earth, taken from a clay shore, intermixed with soft slate stone, shells, and marine vegetables. During the passage, the vessel experienced a violent storm, which was followed by very hot weather, and the extreme putrefaction of a quantity of codfish that was on board. From these causes combined, the air in the hold became soon so contaminated as to extinguish lights immediately. The disease was identified as yellow fever by Dr. Halliday, an experienced practitioner of the Havana, and author of a clever essay on the disease as it appeared there in 1794.[3]

[1] Med. Repos. vol. iv. 245.

[2] An Account of the Malignant Disease which appeared in the U. S. frigate General Greene.—*Med. Repos.* vol. iv. pp. 2, 3.

[3] A Short Account of the Origin, Symptoms, and most approved Method of Treating the Putrid Bilious Yellow Fever, &c., which appeared in the city of the Havana, &c. Boston, 1796.

In the following year, 1800, the fever once more broke out in the ship, after a long cruise in warm climates, where, however, she had not been exposed to morbid effluvia from the shore or contaminated ships, and where the crew had remained all the time unusually healthy. The frigate reached the Chesapeake on the 11th of July. Thence, after a detention of three days, she sailed for Newport, where she arrived on the 21st. Some cases of bilious fever had occurred prior to her reaching the Chesapeake, but they were readily controlled by usual remedies. "Every customary method of preserving purity of air and the health of the seamen had been assiduously observed. The ship was freely ventilated, scoured, whitewashed, sprinkled with vinegar, and the nitrous fumigation" "was frequently excited between decks." Nevertheless, the yellow fever broke out soon after she had left the mouth of the bay, and continued to prevail after her arrival at Newport, when it assumed a more malignant and fatal character, and attacked some individuals from the town who worked on board, or bathed near her at the time her bilge-water was pumped out.[1]

The next case I shall mention is that of the United States ship Hornet, which was visited by the yellow fever in September, 1828, while lying at Sacrificios, a small island about three miles from Vera Cruz. Dr. Barrington, of the Navy, to whom we are indebted for an account of this fever,[2] states that there "was no epidemic in the city of Vera Cruz, excepting the dengue; nor was the fever prevalent at any place where the ship had touched on her cruise." From this, we may conclude that the fever originated on board—an opinion rendered the more probable by the circumstance that the vessel was at the time in a condition well suited to the evolution of noxious effluvia.

"In the winter of 1827, the Hornet had undergone extensive repairs; she was 'salted,' and consequently very damp; the moisture collecting in drops on the beams, &c., when the atmosphere was charged with vapour. When she was 'broken out' at New York, after her return in 1828, great quantities of mud and other filth were taken from her hold; and in her timbers and lower works was discovered a considerable collection of chips and shavings in a putrid state, which had fallen there during repair. The bilge-water and smell from the hold of this ship were exceedingly unpleasant.

"During the two months previous to this time [the breaking out of the disease], the weather had been clear and oppressively warm, with very little rain—the thermometer averaging 87° at noon; at no time above 90, or under 79°. It was kept on the berth-deck, immediately under the main hatch, in as cool a situation as any between decks.

"When the Hornet arrived at the Navy Yard, Pensacola (in lat. 30° 17″ N.), from Vera Cruz, we had," says Dr. Barrington, "but two new cases. After leaving Pensacola, on our way to New York, no one was attacked until we got into the latitude of the southern capes of Florida (about 24° 30″). While here the temperature varied from 78° to 82°, and we had an increase of seven new cases to our sick-list, two on the 5th, and five on the 7th Nov.,

[1] Account of the Yellow Fever which originated on board the U. S. frigate General Greene. By E. T. Waring.—*Med. Repos.* vol. iv. pp. 234.

[2] American Journ. of Med. Sci. vol. xii. pp. 307–8.

and one more, being the last on the 8th. From this time as we increased our northern latitude, and the thermometer gradually descended towards the freezing point, we had not another case, and those already attacked rapidly convalesced." P. 307.

Here again there could have been nothing like the introduction of a contagious germ. While at Sacrificios, the vessel was at too great a distance from Vera Cruz to have been contaminated by morbid effluvia, evolved in that city and wafted through the agency of the wind. But even had the ship been lying within infecting distance from that city, no yellow-fever epidemic existed there at the time. Nor could the disease have been derived from malarial poison originating at Sacrificios or on the neighbouring coast, as the fever that usually prevails there is of a character different from that which appeared on board. Independently of this, it may be remarked that the ship contained materials which, on land, have often been found associated with the development of the disease, and was in a condition such as to suggest the idea of the evolvement of deleterious effluvia; as well as placed under atmospheric influences calculated to favour or produce that result. It must be noted, also, that the disease disappeared on the vessel reaching a cold latitude—an occurrence unusual in regard to fevers not due to local causes.

Much to the same effect is the case of the United States ship Levant, the crew of which suffered severely from the yellow fever at Pensacola, in 1841. This case, I am aware, was adduced by the late Dr. Carpenter, of New Orleans, a warm and uncompromising advocate of the doctrine of contagion,[1] in proof of the introduction of the fever on that occasion into Pensacola from the West Indies. But no facts of a satisfactory kind have been brought forward to establish the reality of that introduction, while a variety of circumstances induce the belief that the fever originated on board the ship. Dr. Hulse, of the U. S. Navy, who, in a clever essay on the yellow fever,[2] adverts to this case in evidence of the local origin and non-contagious character of the disease, makes the following statement which goes far to establish the correctness of that opinion:—

"On board of the Levant sloop of war, we have numerous facts to prove that there existed a cause additional to that of the atmosphere, in the foul state of the hold of the ship. This ship was lying opposite to Pensacola, during the month of August, and on the last day of that month, four cases of yellow fever were sent from her to the hospital. In three or four days, she dropped down to the navy-yard, dismantled, and her crew were sent on shore at the yard—a portion of them still communicating with her; and on the last day of September, ninety-nine cases of yellow fever had been admitted into the hospital from her officers and crew. New cases continued to occur among the ship's company, now located at the navy-yard, until we received thirty-nine more, making in all one hundred and thirty-eight cases from this single

[1] Sketches from the History of Yellow Fever; showing its origin, and disproving its domestic origin, and demonstrating its transmissibility, p. 29.

[2] Maryland Med. and Surg. Journ. April, 1842, pp. 392–4.

ship! The disease did not disappear till the 5th Nov., after several severe frosts."

During the whole of this time, not more than one or two well-attested cases occurred among the men connected with the yard; and as they were within infecting distance of the ship, and all the other cases were traced to the latter, the conclusion is natural that the disorder was due to causes therein contained, and not to any external influence.

Much more interesting than the preceding, and more deserving of our serious consideration, is the case of the prevalence of the yellow fever on board of the frigate Macedonia, in the summer of 1822. This case gave rise to much controversy, and resulted in a Court of Inquiry,[1] from the record of which the following narrative is derived.

The Macedonia, under the command of Captain James Biddle, sailed from Boston, at the navy-yard, at which she had recently been fitted out for the West Indies, on the 2d day of April, and reached her destination with a healthy crew, about the close of the same month. While in the harbour of the Havana, where she lay from the 28th of April to the 4th of June, with the exception of one day, and which, like Cape Haytien and Port au Prince, where she subsequently touched, was remarkably healthy, malignant yellow fever broke out in her. The first case occurred on the 8th of May, and ended fatally on the 11th; another died on the 19th, after which the disease extended rapidly among the crew, and carried off several of the officers. On the 4th June, the ship sailed for the Island of St. Domingo, and on the passage the disease continued to prevail; though the number of new cases lessened, and the sick appeared better while at sea. But at Cape Haytien and Port au Prince, the sickness and mortality continually increased, and the ship became so infected that there was no reasonable ground for expectation that the crew could be relieved but by change of situation or climate. The captain, therefore, after returning to the Havana, and staying there a short time, sailed for the Chesapeake, on the 24th of July. P. 40.

The ship seems to have been, apparently at least, in an average or even clean state, except as regards her hold, the air in which, after she had arrived at the Havana, was found by the officer in charge to be very dense, close and disagreeable, as well as hot. The hold was not at first offensive to the smell or otherwise, except once, when, on removing four casks, situated under the fore hatch, a quantity of dirt was discovered. While at the Havana, no other of the ground tier of casks were removed, and no other dirt discovered at the bottom of the hold. The latter, at the time of the fitting out of the ship, which had lately arrived from the coast of Brazil, was in a very dirty condition, for a large quantity of mud was found in her; the casks were rotten, and the water pumped out was black and muddy. Much of this was removed, so that when the ship sailed she appears to have presented nothing highly objectionable. Nevertheless, Capt. Biddle, in his letter to the Secretary of the Navy, positively asserts that the great bulk of the ballast, although covered with mud and dirt, was neither moved nor properly cleansed, and the hold was stowed with this horrid and offensive matter remaining in it. "Offensive,

[1] Minutes of the Proceedings of the Court of Inquiry ordered by the Secretary of the Navy, on the application of Capt. J. Biddle, in October, 1822, Washington City, 1822.

indeed, it might not have been at Boston, in the winter season; but it is obvious that it would, and must become highly so, after it had time to ferment within the tropics." P. 42.

Water was let in the hold at the Havana, between the 28th of April and 7th of May. After this, Capt. Biddle, "having been informed by some English officers, who arrived there after the Macedonia, that there was a standing order in the English service that water should not be let into their vessels in the port of the Havana," (p. 4,) the practice was discontinued. Soon after this, the bilge-water was found to be very filthy and offensive, to such an extent, indeed, that when it was pumped out, in one instance, the captain "sent off from the ship as many of the men as could get into the ship's boats, and the rest were sent into the tops. There was a gelatinous substance of a very offensive character on the chain cable when hove in; and on taking out the starboard cable a part of it was found to be wet, in conquence of a leakage from one of the berth-deck scuppers. The casing of this being removed, about two buckets full of very offensive filth was found (pp. 6, 7). It may be remarked that by the time the vessel arrived at Norfolk, a change had taken place in her condition; for it is stated by the master (John Robinson), who then attended the breaking out the riding and ground tier, that there was not more dirt in the hold than usual. About twelve casks of lime had been thrown into the hold before that operation was performed; then a quantity of water was let in, and when this was pumped out it was not found dirty. Mr. Robinson was in the hold after all the casks had been taken out, and did not find then more dirt than might have naturally been expected. The hold was not offensive before broken out, and even appeared to be sweet. Two of the limber-boards were removed, and the timbers appeared to be clean (p. 24). Purser Thornton likewise states he witnessed no unusual filth, and that the hold was not offensive (p. 26).

Be this, however, as it may, the sickness and mortality on board, according to Capt. Biddle, was greatest among the persons employed in the hold, and among the carpenter's crew, who by working the pumps were most exposed to the offensive bilge-water discharged from the ship (p. 43); and by Dr. Chase, one of the surgeons, it is stated that the disease commenced near the pumps (p. 28). The boat crews were, on examination, found to have suffered less than the rest of the ship's company (p. 9). "It appears that the awning was constantly spread while in the Havana, and that the men were very little exposed to wet or to the sun, or to duty in boats, or to fatiguing duty on board, being excused from keeping watch at night," (p 39.)

From these various circumstances the inference is natural that the disease, which carried off one hundred and one individuals out of a complement (including officers) of three hundred and seventy-six, arose from the operation of causes located in the vessel itself. There was, as we have seen, no yellow fever at the time in the city or port of the Havana, and the same fact has come to my knowledge through other channels. Other vessels, at no great distance from the frigate, did not suffer from the disease, and neither officers nor men could have communicated with individuals already affected. Hence, it was impossible for the fever to have arisen from the introduction on board of a contagious germ, or from morbid effluvia proceeding from the port, and blown from a distance. The disease there produced continued on board during the passage to St. Domingo, and therefore could not have depended on a

cause existing in the harbour or city of the Havana, for in that event it would have ceased soon after the vessel put to sea. It increased at Port au Prince, and as the fever was not prevailing there at the time, its aggravation was not the result of external influences having their source at that place. It is to be remarked that the disease continued to prevail during the passage back to the Havana, as well as during the stay there, and did not cease before the arrival of the vessel at Norfolk, and the landing of the crew. To this must be added that the ship's hold was the receptacle, while at the Havana, of materials which, in other localities, have, under similar atmospheric and thermometric conditions, given origin to morbific effluvia of a most pestiferous character; that the disease first attacked and prevailed most severely among those most exposed to the effluvia from the hold; that the boat's crew, who were less exposed to those effluvia or the contaminated atmosphere of the ship, were less affected by the fever than those who remained on board; and that the medical officers of the ship, Drs. Cadle and Chase, and Dr. Dayers, of the navy, whose opinion was asked by the court, and who was familiar with all the circumstances of the case, expressed the opinion that the fever originated from noxious effluvia generated in the ship's hold (pp. 4, 35, 50). Whether the effluvia proceeded from sources of infection previously existing in the vessel, and brought in it from Boston to the Havana (innocuous and unperceived there, but efficient within the tropics); whether they were furnished by the water improperly and imprudently let into the hold at the Havana, and which, as it would seem, was impure; or whether, as is more probable, the poison was created by the operation of that water on materials already collected—mud, dirt, the timber of the ship, or the wood of the casks, &c.—matters not to the question more particularly before us. All we need look for is, that the cause was located in the vessel itself, followed it wherever it went, and never ceased to exercise its baneful influence, till, in a more northern climate and cooler season, the latter was emptied and purified.

Other causes were suggested. 1st. Sudden transition from a cold to a hot climate. 2d. Tropical heats acting upon constitutions unacclimated. 3d. Predisposition to disease from debility, arising from previous disposition or disease—the crew having suffered much from catarrhal complaints during the passage. 4th. Dampness between decks. 5th. A want of suitable clothing, and neglect of personal cleanliness, as also a privation of those articles of diet which seamen are in the habit of purchasing of the purser. 6th. Sleeping on the decks, and exposure to the night air and dew, as also sleeping in a crowded state on the berth-deck. 7th. Fatigue, arising from the frequent exercise at the large guns in the harbour of the Havana. 8th. Despondency, arising from an impression that the causes of sickness were on board the vessel, and the apparent inefficacy of medicine. 9th. Too long sojourn in the port of the Havana; on account of the greater degree of heat the men were exposed to than they were accustomed to, or would have experienced at sea, as well as exposure, during that time, to the foul and deleterious air of the

port. 10th. Neglect during that time of hoving up the ship broadside to the wind, so as to enable the latter (which blew pretty regularly from morning till sunset) to penetrate, cool, and purify all parts of the vessel. To all who have some knowledge of yellow fever, and of the causes which usually give it origin, it need scarcely be stated that the above-enumerated circumstances may have predisposed to, but could not have produced the disease. The limitation of the latter to the frigate, and the general nature of some of those influences, as well as the fact that their operation extended to the crews of all the other vessels in the harbour without producing the disease in one of them, sufficiently indicate the improbability of their being the efficient cause of the epidemic in question; while the others have never been known to occasion the fever, and are not of a kind to justify the idea of their doing so in any locality and under any circumstances.

Scarcely less important than the preceding is the history of the outbreak of the yellow fever on board of the U. S. brig Enterprise, in 1822. This case has been cited by contagionists, and supporters of the exotic origin of the disease, as one strongly illustrating the correctness of their views; while, by others, it has been more correctly regarded as showing the origin of the disease from sources of infection located in the vessel itself. The Enterprise arrived at the New York quarantine, on the 8th of July, from a cruise in the West Indies, via Charleston. Twenty-four days previous to her arrival, she had been three-days off the Moro Castle, Havana, whence she sailed for Charleston, somewhere between the 20th and 24th of June. She remained at Charleston eight days. The disease broke out in her the day she reached there, in the person of one of the lieutenants. He died on the 1st of July. The cases soon multiplied, so that by the time the vessel arrived at New York, they amounted to ten. On the next day they increased to thirteen, all of whom were transferred to the Marine Hospital, Staten Island. On the 11th, the number of cases had reached to twenty. It was then thought proper to bring all the men ashore, and to have the brig thoroughly whitewashed and cleansed, and her hold daily fumigated with nitrous oxide gas. Lime was slacked in her limbers, her iron ballast was whitewashed, and she was well ventilated by four windsails hoisted constantly in her hatchway.

Dr. Joseph Bayley, the health officer, in an official communication to the President of the Board of Health, says:—

"The crew were so intemperate during the few days that they remained on shore, that we were under the necessity of sending them on board. The brig had been purified in the interim. But it was soon evident that she was still an infected vessel, for in six days after the crew were sent on board, four men were taken sick with yellow fever, and, in the course of five days, seven more had the same disease, making one-fourth of all the men on board; and five of the eleven taken sick died. These persons must have been infected after their return to the brig, and subsequently to her purification, otherwise the disease would have been excited in them, as it was in the case of some of their shipmates, from their irregular living, and exposure to the weather, by lying on the ground at night." * * * * *

"This fatal evidence of the cause of the disease still lurking in the Enterprise, induced us to have the crew brought on shore again, and recommence her purification, which was done by using two more casks of lime, by letting into her hold daily several feet of water, and keeping up windsails. Six men were left in charge of her, whose duty it was to pump out the water and trim the windsails," and they were directed not to sleep below in her hold.

"On the 2d August, twenty-five days after her arrival, and after repeated whitewashing, letting in water, and constant ventilation, one of the sailors obtained permission of a lieutenant to take his wife on board; this woman was taken sick with yellow fever on the 9th of August, and she died in the Marine Hospital on the 18th of that month."[1]

In this case every unbiased mind must recognize the operation of a febrile poison originating in and restricted to the vessel. The disease could not have been derived from Charleston, for that city appears, from all the accounts to which I have had access, to have been healthy then, and to have remained so during the whole season. Besides, had it been otherwise, the disease, as we have seen, broke out the day after the arrival of the vessel, certainly too soon to justify the idea that the officer first attacked could have taken the disease there. Nothing is said, in the accounts of this visitation, of the sanitary condition of the Havana, at the time the Enterprise was off Moro Castle, and I have looked in vain in other publications for some definite information on the subject. Nevertheless, we are warranted in the conclusion that the port and city were then free from the fever in an epidemic or sporadic form, inasmuch as the Macedonia, which there lost so many men the same year, and left on the 24th of July, was the only vessel that suffered, a circumstance which would not have occurred had the port been sickly some weeks before. Besides, the Enterprise did not enter the port, but remained off the Moro Castle, where vessels usually ride with impunity. Neither is anything said about boat communication with the port, and about the officers and others who first sickened being those who *did* communicate, supposing such communication to have taken place.

The cause continued in full operation after all the crew had been removed, sick and well, and attacked individuals who ventured on board, precisely as occurs in infected localities on shore, after all the inhabitants have been removed, and that, too, after the process of disinfection had been gone through to a sufficient extent to destroy any amount of contagious germs or external effluvia that could have been introduced in the vessel. It is doubtful whether the contagion of smallpox would have proved so obstinate.

Other cases of evident infection generated on board of our vessels, and spreading among the officers, crew, or passengers, or on land in the vicinity, are on record, and are of a nature which admits of no doubt. A few more references will be sufficient.

[1] History of the Proceedings of the Board of Health of the City of New York, in the Summer and Fall of 1822, p. 142; see also pp. 15, 123, of same work, and Bayley's Report of the Epidemics of 1822, N. Y. Med. and Phys. Journ. i. 426.

In 1799, the sloop Mary was sent into Philadelphia as a prize to the ship of war Ganges. She was not from a sickly port, and, at the period of her arrival, there was no one sick on board. As soon as her cargo was removed, her decks were washed, and the hatches and ports all shut down. In this way she remained three weeks, the weather being at the time very hot and dry. The hold, and the interstices between the timbers, contained a quantity of vegetable matter (coffee), which—being mixed with the bilge-water and that which had fallen from the deck at the time of washing, aided by the high temperature and close confinement of the air—fermented, and gave rise to the development of highly offensive effluvia.[1]

"The noxious effluvia," says Dr. Caldwell, "that were generated in abundance, having no vent to escape and be dissipated in the atmosphere, mingled with the air in the vessel's hold and produced in it an extreme degree of vitiation. A smell, resembling that of common bilge-water, but more offensive, became troublesome to those engaged about the wharf, and was at length traced to the place where the Mary lay. She was soon suspected as the source of this nuisance. Her ports and hatches were accordingly thrown open, when the foul air rushed out in torrents, and spread through the neighbourhood a suffocating stench."[2]

Several persons exposed to these effluvia were, in a few days after, seized with decided symptoms of yellow fever.

The following case, though happening in an English vessel, may, from the development of the disease taking place in one of our ports, find a place here. The British three-decked ship Hibbert, six hundred tons, arrived at New York in July, 1803, from Portsmouth (England), in ballast, and was ordered to ship a cargo of pine timber for the Bay of Honduras. The Hibbert had been used as a transport for soldiers between England, Nova Scotia, and the Bahamas.

"About the 20th of July, while the people were employed in clearing away the rubbish and stuffs between decks and below, it was observed that she contained a quantity of sand-ballast, which had remained there a number of years without being changed. It was, however, not taken out nor shifted." On scraping and overhauling the lower and middle decks, these and the timbers were found to be overspread with all manner of corrupt and excrementitious materials. The stench occasioned by the collection and removal of this trash and offal was intolerable. The men were obliged to run to the port-holes and hatches for fresh air. This filth was thrown overboard beside the wharf into the salt-water; but in performing this the whole ship became offensive. Several of the men employed, both among the sailors and hired labourers, were taken ill. "One of the seamen, after two days' illness, had symptoms of hemorrhage and black vomit, and was sent to the Marine Hospital, where he died." "The stevedore who loaded the ship was poisoned by the effluvium, and died, after hemorrhage and black vomit, early on the fourth day."

The heat at the time was very great, being from eighty-five to ninety-three degrees in the shade, "during the shining of the sun." It should be

[1] Caldwell's Med. and Phys. Memoirs, pp. 93–4. 1800.

[2] Ibid. p. 95.

added, that the city was then perfectly free from yellow fever, and that the disease produced in the Hibbert was not communicated by the sick. This vessel sailed for Honduras, and, as was anticipated, continued to be in an unhealthy condition. Several of her people died on the passage. After arriving at her place of destination, she was unloaded about two miles from the settlement of Honduras. While the work was going on, a number more of the persons employed on board fell sick and died of yellow fever. The disease was limited to them and did not spread.[1]

If we now turn to the history of the yellow fever in English vessels at sea, or in British or foreign ports, we shall find many striking instances of the kind under consideration. Of these outbreaks, not the least interesting and conclusive are those which occurred in the year 1821 on board the armed transport Dasher, the frigate Pyramus, and an unarmed transport. They are recorded in an official report by Dr. Hartle.

The Dasher left Barbadoes for Tobago on the 26th of August, but, in consequence of severe gales, was obliged to go to St. Lucia. Proceeding thence to Tobago, she there received on board a company of the ninth regiment, and sailed for Grenada, in order that the men might avoid the endemic fever of the former place. This company, while on board, was perfectly healthy. On their landing at Grenada, the men were immediately placed in quarantine, and remained so for the space of fourteen days, during which period not an individual was sick. "The Dasher, after landing this company at Grenada, proceeded hither (Antigua); but a few days before she reached this port, yellow fever made its appearance among her crew, and previous to her arrival, six men had been attacked, two of whom died." The crew was landed, and the disease ceased among them. Blacks were employed to remove the ballast and clear the hull. At the urgent solicitation of Dr. Hartle, the limberboards were taken up.

"Here, to the astonishment of every one, lay the mischief. On taking up these boards, the noxious effluvia surpassed anything that I had before experienced, and it was with difficulty that the blacks, who were accustomed to this work, could remain. The ship-carpenter, who had been constantly accustomed to work in the dock-yard, and on many such occasions, assured me that he had not before experienced so putrid a smell from any ship's hold. Between the timbers there was a collection of carpenters' shavings, &c. in great quantities. These had so completely choked up the limber-holes that the water could not pass to the well of the pump, and lay stagnant. The vegetable matter was, therefore, in a state of decomposition, and this, acted on by high atmospheric temperature, became neither more nor less than a marsh in the centre of the ship. "That the fever," continues Dr. Hartle, "was generated on board, by noxious effluvia received into crowded and badly-ventilated berths, is, I think, fully proved; for the moment the crew and marines were removed from the sphere of this hidden enemy, the disease ceased."

Nothing like the most distant appearance of contagion could be traced; for none but those residing on board the ship, or exposed to the effluvium from her hold, prior to her expurgation, suffered by the fever.[2]

[1] New York Medical Repository, vol. vii. p. 87, and vol. viii. pp. 71, 72.

[2] Facts and Observations in refutation of Sir G. Blane's Doctrines as to the Contagious nature of Yellow Fever, by A. Musgrave, M. D. Appendix B.—*Med.-Chir. Rev. and Journ.* vol. iv. p. 994.

The Pyramus left English Harbour perfectly healthy on the 19th October for St. Kitts, where she remained until the 28th, when she sailed for French Harbour. A day or two prior to her arrival at the latter place, fever, of a most alarming type, made its appearance among the officers and crew. The sick were landed, and the ship sailed for Barbadoes; but the disease continued to prevail. A medical board was assembled in order to investigate the probable cause of the sickness. In the first part of their report, the board attributed the cause, in some measure, to the coal-tar with which she was injected, for they particularly observed the offensive effluvium arising from that substance mixing in the hold with the bilge-water. In the second paragraph, they remark that the ship lay thirty-four days, at different times, in English Harbour; and in the next, consider, with respect to the predisposing cause of the disease, that something must be attributed to the stay of the vessel in that harbour. The vessel, at the suggestion of the board, sailed from Barbadoes and cruised as far as 28° north; but, finding this avail nothing, and that the disease became more alarming, the captain hastened to English Harbour, where he arrived on the 3d of January, 1822. The crew was there landed, the ship emptied of her stores, shot, tanks, ballast, &c. On the opening of her hold, the effluvia which issued surpassed anything Dr. Hartle had ever witnessed, and affected every one exposed to its influence. The quantity of filth which was taken out was sufficient to fill four large mud-boats, consisting of shavings mixed with coal-tar and the water; which, in consequence of the choking of the pumps had accumulated under the limber-planks. All the cases which occurred during the process of expurgation were easily traced to exposure to this bog; and Dr. Hartle very justly refuses to refer the disease to the influence of English Harbour, inasmuch as other ships of the squadron that lay much longer there escaped the infection. It may not be amiss to remark that the sick of this ship were landed and placed in the capstern of Antigua dock-yard on the 15th of January; that between that day and "the 30th, only eighteen cases occurred; but that on the 31st, six fresh attacks were added to the list, and the disease again appeared with increased violence and malignity." Dr. Hartle adds: "This sudden reappearance and violence of the disease induced me to believe that the people had some communication with the ship, which was then undergoing a general expurgation. This, with a little trouble, I ascertained to be the case." Changes were made in the distribution of the convalescents and the rest of the crew, and the disease was put a stop to completely. The crew re-embarked on the 14th of March in excellent health, and remained so.[1]

[1] Musgrave, *loc. cit.* pp. 995–98. See also Burnett's Report on Fever of Ascension, p. 34.

Dr. Robert Armstrong ridicules the whole account of this severe visitation; denies the possibility of so much filth having accumulated in the ship, or if it had so accumulated, of its having produced the disease, and adds: "The following year, when serving in the West Indies, I met with two officers who belonged to the Pyramus at the time the fever prevailed; and on making inquiries as to the truth of the various reports in circulation respecting her, was informed by one, and his statement was corroborated by the other, that a certain domestic kept an open grog shop; and that drunkenness and irregularities had more to do with the fever than a little bilge-water, or a few dead rats in the hold. A staff assistant-surgeon, whom I met at Barbadoes, informed me that he had visited the Pyramus, but added, with a certain sarcastic sneer, that his vision was then defective, and that he could not see so far as other people," (*loc. cit.* p. 60.) When the reader is informed that the disease which pre-

As regards the transport above alluded to, the disease broke out on her passage from Barbadoes to English Harbour. The sick and all the troops on board were landed, and the vessel, after a partial cleansing, proceeded to St. Kitts; whence, having landed the stores and baggage, she returned to English Harbour. She then underwent a general purification, when a portion of the troops re-embarked and sailed for Grenada, where they arrived in good health—the fever not having reappeared on board.[1]

"It is a pleasing reflection," adds Dr. Hartle, "and a source of great gratification to me, that notwithstanding 147 cases of yellow fever, as distressing and malignant as any I before witnessed, have been by the three vessels imported into this island since September, 1821, we have not had a single instance of any individual but those directly exposed to the local causes being attacked."[2]

Dr. Dickson, in a report to the Transport Board, alludes to the generation of the yellow fever in several vessels, the Blonde, Gloire, Star, Wanderer, and particularly the Dart. The disease broke out on board of the latter in April, 1807, and was satisfactorily traced to effluvia exhaling from offensive matter collected at the bottom of the water-tanks.

"So many people," Dr. D. remarks, "were taken ill, after going on board this vessel, lying guardship at Barbadoes, that it was difficult to account for it, except on the principle of contagion, until the peculiar construction of the ship, viz.: her being divided into compartments below so as to prevent the circulation of air and the stowage of the water in *bulk*, were adverted to, and on examining the large tanks, or cisterns, their bottoms were found covered with an offensive slimy mud or deposition."

On the removal of some of these causes, the knocking down of the bulkheads and the cleansing out of the cisterns, the fever was put a stop to. In the Thetis, in 1809, "the fever did not appear until the hold was broken up, when about a dozen of men so employed were taken sick, and four out of five carpenters who lifted the limber-boards died."[3]

In his account of the fever which prevailed on board the Nyaden, the surgeon observes:—

"In clearing the after-hold, which was very offensive, several men immediately took the fever; some of whom died. This effect," continues Dr. Dickson, "is the more evident when contrasted with the healthiness of some vessels *close* to them, which were either accustomed to the climate or differently employed." Well could Dr. D., with these facts before him, remark: "The power of *impure* but strictly *local* effluvia in producing yellow fever on board ships, also, as well as on shore, is unquestionable."[4]

vailed on board of this ill-fated vessel was the true yellow fever; that the number of cases amounted to one hundred and two, and that of these, 30 died; he will feel no hesitation in admitting that drunkenness has seldom before or since produced such an extraordinary effect. The case should be recommended to the attention of Father Mathew. Other instances, similar to that of the Pyramus, fare no better at the hands of Dr. Armstrong, and are disposed of much in the same way.

[1] Musgrave, *loc. cit.* p. 998.

[2] Ibid. p. 999.

[3] Dickson's Report in Bancroft's Sequel, pp. 208–9. Dickson on Yellow Fever, Edinb. Journ. vol. xiii. p. 26.

[4] Bancroft, Id. p. 209.

Dr. Gillespie, whose work on the Diseases of the Leeward Island Station,[1] contains much useful information on the subject of the yellow fever, relates several facts of an interesting character relative to the matter before us. In speaking of the events on board the ships cruising in the West Indies during the year 1795–6, he remarks that at that time all the vessels of the squadron had their crews in good health, except the frigate La Pique, which had been captured and carried into English Harbour, in Antigua, to be refitted.

"In the beginning of November that frigate arrived at Martinico, and the remains of the crew had acquired a good state of health, though they had the sallow complexion which men generally have when confined in impure air. November the 12th, she sailed for Barbadoes, having received a draft of seventy-five men from the Ganges; from being embarrassed with a convoy and from unsettled southerly weather, the passage was long; two hundred French negroes were taken out of a vessel which was in danger of foundering, and were kept on board the Pique until her arrival at Barbadoes. They were confined some time in the hold. Such a mixture of men, strangers to each other, has been often found to occasion sickness in ships, and together with other causes fatally operated here, before the arrival of the ship at Barbadoes. A malignant yellow fever had made its appearance, and continued to rage with destructive violence amongst the crew of the Pique, and which is supposed to have proved fatal to 150 men. Out of the Ganges draft twenty-eight alone are said to have survived the epidemic. The negroes, it is probable, were saved by being disembarked on the arrival of the Pique at Barbadoes. This," continues Dr. Gillespie, "is a melancholy instance of the generation of a fatal epidemic on board of a ship, at a time when the inhabitants of Barbadoes and the crews of the other ships in company remained free from any such disease." P. 53.

To this we may add that Dr. Gillespie being, as every page of his volume attests, fully competent to discriminate between true yellow fever and the other forms of the disease observed on shipboard, his statement of the occurrence in the ill-fated vessel will of itself be sufficient to scatter to the winds all the doubts entertained by fanatic contagionists as to the possibility of that generation.

Scarcely less satisfactory, in illustrating the development of the yellow fever on shipboard, is the following case, communicated by Dr. Crawford in a letter to Dr. Trotter, and inserted by the latter in his *Medica Nautica*.[2] After remarking that previous to the British squadron appearing before Port au Prince, in May, 1794, none of the ships were afflicted with contagious diseases, and that though deaths had occurred, they were caused by the common remittents of the country, Dr. Crawford proceeds:—

"On the capture of the port, June 4, 1794, about forty sail of merchantmen were found in the harbour, most of them large vessels, the cargoes of which were coffee, cotton, sugar, and indigo, that had been stowed in them

[1] Observations on the Diseases which prevailed on board a part of his Majesty's Squadron on the Leeward Island Station, between November, 1794, and April, 1796. London, 1800.

[2] Vol. ii. pp. 97–8.

from one year to three, in which time many of them never had their holds opened from the disturbances that prevailed among themselves. On board of them men were sent from the whole squadron to fit them for the passage to Jamaica, which, from the state they were in, was not to be soon done. The weather was excessively warm, and some days elapsed without a breath of wind. The very first day the people proceeded to work, many were taken ill, and sent on board their respective ships with fever; several with strong convulsions that were succeeded by fever, and one or two died. I was sent to several to remove the sick, where I found the stench from the damaged coffee and sugar almost insupportable; it wanted no great degree of penetration to prognosticate the consequences in two, where there was a quantity of sugar, &c., melted in the hold. I saw the mixture in an actual state of effervescence, and bubbling up from every part. From these ships, I can vouch, the disease was first introduced to the Penelope. I most truly think that the primary cause of this horrid disease originated from these ships. One thing is most certain, that, if it did not originate there, it was much increased in virulence by our connection with them. After they were fitted out, on their passage to Jamaica, they lost more than three to one in comparison with the men of war, although this passage was not more than seven days. In the Horizon, on board of which was Lieutenant Gaeren and Mr. Stupart, of the Europa, the crew had been replaced three times, and from illness got in her died thirty men. Seven out of ten died on the passage to Jamaica; another of them was picked up at sea by a Guineaman, with every soul dead on board; even a number of negroes, who afterwards cleared them, died from fevers caught on board of them."

Dr. Chisholm is probably among the very last authors in whose writings we should expect to find any statements tending to show the local origin of yellow fever in the West Indies, whatever might be the case in Africa. And yet he has furnished us with a strong instance of the kind, in his account of the supposed introduction of the disease at Demerara, in August, 1800. The account was written by him at Demerara, where he then resided, and addressed in a letter to Dr. Davidson, dated August 10, of that year. It will be found entire in the *New York Med. Repository*, vol. v. p. 229, and is quoted by Dr. Bancroft, at p. 746 of his large work on the yellow fever.

"A fever of a most alarming nature," Dr. Chisholm says, "has most fatally prevailed since the beginning of July. I have visited a few of the sick at the request of Drs. Dunkin and Lloyd in town, and of Dr. Ord on the coast; and I have no hesitation in pronouncing it a fever of infection. Its features are almost without exception precisely those of the malignant pestilential fever of Grenada of 1793 and 1794. It is fully as fatal, as rapid, and as insidious. Its origin, as far as it has been ascertained by the gentlemen I have mentioned, seems to be similar.

"A ship arrived about the beginning of July or end of June from Liverpool, after touching at Surinam. The filth on board, occasioned by a cargo of horses, and the extreme neglect of the officers and crew, was such as beggars description. Infection was the consequence. Her officers were the first sufferers; every man died. All who went on board were attacked, within thirty hours after, with a fever of infection. What a lesson this to masters of vessels! How clearly it exhibits the necessity of exertion on their part to maintain cleanliness on board their ships! And how evidently does it display their responsibility to the public for the consequences of misconduct!"

This, if all really happened as stated—and on this subject the reader must judge for himself—is as clear a case of the generation of the yellow fever poison on shipboard as could be desired. It is, indeed, admitted as such by Dr. C. Whatever he may have thought of the manner in which the disease spread, after it had fairly been established in the place, nothing is said or hinted at calculated to lead to the supposition, that the vessel had received the infection at Surinam; and it cannot be supposed that any one will entertain the idea of its having been imported from Liverpool. If, therefore, the fever broke out in the way mentioned, it must have arisen from causes located in the vessel itself. As to its contagious nature, although Dr. Chisholm, as all might have foreseen who are familiar with his decided opinion on the subject, did not hesitate to pronounce in the affirmative, it would seem that Drs. Ord and Durkin, to whom, as we have seen, he refers, and who probably had more experience in the matter than himself, as he was not then in the practice of his profession, entertained a different sentiment; for we are informed by Dr. Bancroft (p. 747), that both these physicians stated to him a few years after, that they had never seen any fever in Demerara, or on that coast, which they believed to be contagious.[1]

[1] "Ships containing wine in their holds in a state of decomposition, are generally extremely sickly, and the character of the prevalent disease is that of yellow remittent fever. Several instances of this took place in Fort Royal Bay, in the years 1797, 1798; and the situation of the ships in the open bay, far from the influence of marsh effluvia, precludes a suspicion of the fever proceeding from that cause." "The ship Nancy, Capt. Needs, from Fayal, with a cargo of wine for the army, arrived at Fort Royal, Martinico, in the month of October, 1798. She met with a gale of wind at sea on the 17th September, and several of the casks, from the motion of the ship, became leaky. The captain was actually taken sick at sea, and died with every symptom of the highest grade of yellow remittent fever. The mate and several of the crew were attacked with the same complaint; they recovered; but a mate, shipped at Fort Royal, fell ill on board and died. The ship lay out in the open bay; no vessel near her was sickly; and she herself became very healthy after the cargo was landed." —*Chisholm*, vol. i. p. 379.

As Dr. Chisholm denominates the disease thus produced yellow remittent fever, and regards it as essentially different from what he considers to be the true malignant yellow fever—the former being of local origin—produced by malarial exhalations, and destitute of contagious properties, and the latter arising from morbid effluvia emanating from human bodies, originally imported from the western coast of Africa, and transmitted from individual to individual, or through means of fomites, it may be urged that the instance of infection on board of the ship Nancy cannot find a suitable application in pages, the object of which is to show the origin of yellow fever in ships from the evolvement of poisonous effluvia; for what might be true of the one might not necessarily be so of the other. But if, while bearing in mind the ill success of Dr. C., in his endeavours to prove the introduction of malignant yellow fever into Grenada by the ship Hankey, in 1793, and hence into other places, as well as the contagious character of the disease, we turn to the description of his yellow remittent fever, contained in the first volume of his work, and of the epidemic recorded by him in Duncan's *Medical Commentaries* for 1793, and compare it with that he gives of the

The case of the Regalia, mentioned by Dr. Ferguson,[1] and that of the Rattlesnake, described by Dr. Wilson,[2] afford the most satisfactory proof of the local origin of the yellow fever on shipboard, either from a particular condition of the vessels themselves, or from their ballast or other contents.

The first of these vessels, the Regalia, sailed with black recruits from the coast of Africa, for the West Indies, in 1815. The ship was good, and her crew healthy during the time she was employed on the African coast, until she took on board, a very short time before the blacks were embarked, a very large quantity of green wood, cut down and stowed away the same day. The fever prevailed with great malignity among her crew, and continued to do so up to the time of her arrival at Barbadoes; attacking all on board excepting the blacks, who were exempt from the fever when they embarked, and continued so to the last. From the healthy condition of the crew during their stay on the coast, the absence of fever among the black troops embarked, we are naturally led to look to other agencies than contagion to account for the origin of the disease. These are easily found in the quantity of green wood stowed on the African coast, and the condition of the ballast. The quantity of wood laid in appears to have been considerable, for, as Dr. Ferguson remarks:—

"After she had been several weeks in the West Indies, there were still as many tons of it left as, in the master's opinion, would serve for a voyage to Europe. The ballast, too, had never been changed or shifted from the time the vessel left England, nor for any discoverable time before. It was what is called shingle ballast, small stones, with a considerable mixture of mud and other impurities." "And it had been much spoiled by the leakage from the water-casks. The ship, in respect to leakage, was far from being a dry ship, and from that circumstance might, with better ballast (of iron or large stones), have proved a very healthy one; but the absorption of sea-water among foul ballast and green wood, could scarcely fail to prove unwholesome."

That the cause of the fever resided in the hold of the ship, is proved by the fact that the cleaning of that part proved particularly injurious to those exposed; and that while the fumigation of the ship proved of no avail in purifying it, the fever ceased when she was completely cleaned, and, with her hatchways closed, her whole hold had been exposed to the concentrated heat

fever of Grenada, and those we possess of the yellow fever of this country, Europe, and tropical climates generally, we shall find just cause for suspecting that the difference between them is not as great as that distinguished physician so confidently asserted; and that his yellow remittent fever, and his malignant pestilential fever, constituted at best but two forms of one and the same disease. I may add, before closing this note, that the Nancy is not the only vessel in which Dr. Chisholm, contagionist as he is, admits that the true yellow fever originated; for he states, as his opinion, that the disease which he thinks was introduced into Grenada in 1793, by the ship Hankey, "was generated on board" of that vessel "during her disastrous detention at Bahama."—Vol. i. p. 318.

[1] An Inquiry into the Origin and Nature of the Yellow Fever, as it has lately appeared in the West Indies, &c.—*Medico-Chir. Trans.* viii. p. 108.

[2] Memoirs of West Indian Fever, &c., commonly called Yellow Fever, p. 85. London, 1827.

of many stoves; and if further proof that contagion had no part in the origin of the disease is required, it will be found in the fact, to which attention has already been invited, that though the Regalia communicated freely with the seaports of Barbadoes and other islands, landing the sick or dying subjects of that disease among the inhabitants, or at the hospitals, the infection was not communicated anywhere; and that, after being purified, she sailed from Guadaloupe to Europe, crowded with prisoners, having on board a case of fever which terminated fatally, without communicating the disease to those around.

The Rattlesnake was lying at Port Royal when, on the 8th of August, 1824, the yellow fever broke out in her. For some months previous to that date, there had been very few cases of fever at Port Royal, either in the squadron or on shore. Two came to the knowledge of Dr. Wilson, during the time the Rattlesnake was in harbour, but with neither of them had the individual first attacked the power of communicating. From the 8th of August till the 10th of September, there were occasional cases—in all, nineteen. But after the last date, the disease assumed an epidemic appearance, passing rapidly through the ship's company, and affecting seventy persons within the month. From the 10th of October it gradually declined, and finally disappeared about the end of the following January. On the 27th of August, 1824, the ship went out of harbour on a cruise to leeward, and returned to Port Royal on the 27th of September with forty men ill of fever. Twenty-seven cases were sent to the hospital the same day, in different stages of progress, and for some time afterwards, three, four, or five were sent thither daily. As has been noticed in innumerable instances of the kind, the patients landed did not communicate the disease to their attendants, or to the other sick in the hospital; and when, bearing this in mind, we recollect that the fever began by occasional cases, the subjects of which had not been near people labouring under it out of the ship, and proceeded in that manner for about a month, at the end of which it assumed the character of a severe epidemic, we may conclude that it did not originate in, and was not propagated by, contagion. When, as Dr. Wilson remarks, "we were sending so many men to the hospital daily from the Rattlesnake, almost every fresh man whom we received was attacked by the fever; and it might thence have been inferred that the strangers received the disease from the men among whom they lived; but we had at the same time proof that those men could not communicate it to another when removed from the ship. We had, therefore, 'the bane and the antidote both before us,' and conviction arose from the whole, that the disease at that period could not possess contagious properties; for it were futile to say that it possessed those properties in the ship, but lost them the instant its subjects were removed a hundred yards from its source."

The conclusion, therefore, is natural, that the crew did not take the disease from each other, or from the harbour; but that, like the strangers who came aboard, they received the infection from a cause inherent to the vessel itself. To this we shall the more readily give our assent, if we take into consideration the following account of the limited range of its prevalence on board, and of its mode of progression:—

"In the Rattlesnake, the fever was first manifested near the main hatchway; the marines, and the midshipmen of one berth, suffered its earliest and

most severe effects. Afterwards, it proceeded forward rapidly, but pretty regularly, till it had affected almost the entire ship's company; but it did not go beyond the steerage in the opposite direction, no one being attacked in the gun-room except the purser, and I have good reason to conclude that in his case it was derived from the shore." "But its local origin and limited range of action were most strikingly exemplified in the berths of the midshipmen, and other officers of that class. They were placed exactly opposite to each other, with the pumps at equal distances between them. Only one gentleman was affected in the starboard berth, while every member of the larboard berth was laid up nearly at the same time. The hatch of the pump-well is opposite to, and within three feet of the larboard berth. The members of that berth were generally the junior officers of their class, and were, therefore, it may be said, most susceptible of the disease; but when it is remembered how extensively it prevailed, and how indiscriminately it attacked persons of all ages and temperaments among the ship's company, after every allowance is made for the greater susceptibility of these young gentlemen, the exemption of the others, senior only by a few years, is too striking and complete to be accounted for by their former service, or by any accidents which can reasonably be supposed to have affected them. It can fairly be attributed only to their not having been exposed to the cause of the disease with the same concentration of power, or permanence of operation, as the others; and here the contiguity of the pump-well hatch to the larboard berth cannot be overlooked." —*Wilson*, pp. 159, 160.

That the cause was not the product of contagious germs derived from the shore, is farther inferred from the fact that other vessels lying close by were not affected.

The Primrose, for example, was commissioned about a month after the Rattlesnake, and arrived at Port Royal about a month later, viz., about the end of July.

"She was employed, I may say, exactly as the Rattlesnake was. After a very short cruise, she lay six or seven weeks, including September, within a few yards of where the Rattlesnake lay, and was employed in the same manner. She then followed the Rattlesnake to Chagres and the coast of the Spanish Main, where she encountered similar weather, and remained about six weeks; she then returned to Port Royal healthy, and continued so, and that while the Rattlesnake was converted into a complete hospital from the epidemic prevalence of West Indian fever. On the other hand, in 1825, while the Lively, Pylades, and Ferret were half unmanned, the Rattlesnake lay close to them, in Port Royal harbour, for the space of eight weeks, and did not lose a man."—*Ib.* p. 140.

The next case I shall invite attention to, as illustrating the spontaneous origin of the yellow fever on shipboard from local causes of infection, is that of the Scout, sloop of war.

This vessel, with a complement of one hundred and two men, arrived at Port Royal, Jamaica, on the 13th May, 1822, from England (having previously touched at Barbadoes), in a healthy state. Every precaution that could be devised was taken to secure the health of the crew. The hold was cleansed, whitewashed, dried by means of stoves, ventilated, &c. During the illness of the captain and 1st lieutenant, and the absence of the 2d lieutenant on detached service, the crew indulged in excessive drinking, exposed themselves greatly to the dew at night by sleeping on deck, while, from the

nature of their duty, they were much exposed to the heat of the sun. These men were mostly young, full and plethoric Europeans, newly arrived in a tropical climate. After a three weeks' indulgence of this kind, fever broke out among them; nine were sent to the hospital, labouring under the disease, of whom four died. "At that time there was not a patient with fever in the hospital, and the other ships in the squadron in Port Royal were remarkably healthy."[1] The Scout sailed, in this state, on the 14th of June, and on the 28th arrived off the Havana. The weather was excessively hot, the thermometer ranging from 86° to 89°. From five to seven, with fever, were daily added to the sick-list. The number confined at one time amounted to forty, thirty of whom were in bed, many of them afflicted with black vomit and delirium. "The awning was spread across the main deck, and everything done for the accommodation of the sick; but this space was no sooner prepared than filled." The disease could not be mistaken. The symptoms were of the most malignant character; being, in some instances, accompanied with buboes. The vessel being unable, from her distressed state, to return to Port Royal, made for New Providence, and there landed her sick on Hogg Island, as they were not admitted into the hospital for fear of contagion.

"Hogg Island, in the dry season, is a place healthy enough; but, unfortunately, when the Scout got there, the rain commenced, the type of the disease in many changed, and terminated in intermittent fever, thus adding one disease to another, and, consequently, protracting their recovery." P. 44.

Sir W. Burnett remarks that the instances of contagion mentioned by the surgeon appear to him so unequivocal, that it is altogether unnecessary to say a word on this head. As I have not access to the report from which the preceding is taken, and have derived what has been said from the narrative of Sir W., it is impossible for me to judge of the degree of credit to which these facts are entitled. But whatever may be thought of the power of reproduction acquired by the disease after its manifestation, there can be but one opinion, from the absence of infection in the neighbouring ships and hospitals, of its having originated on board.

The history of the outbreak and prevalence of the yellow fever on board of the steamer Eclair, in 1845—the supposed cause of the introduction of the disease into Boa Vista, has often been the subject of discussion, and must next engage our attention.

This vessel sailed from England for the west coast of Africa in November, 1844. After reaching Ascension, and being properly fitted, she proceeded to the coast, and was employed in watching for slavers off Sharbro and Seabar, from December, 1844, to the 8th of July, 1845. Up to March 2 of that year the crew continued in health. After that the boats were sent up the Sharbro and Seabar Rivers, exposed to all the vicissitudes of the weather and to malarial effluvia; and several times the men slept ashore or in the boats; the vessel, in the meanwhile, remaining at anchor from three to six miles off the coast. From the 3d to the 10th of June, there were seventeen cases of fever, and ten deaths, all of the latter occurring in men who had been employed in the boats. On the 4th of July the Eclair arrived at Sierra Leone, with improving health; the last remaining

[1] Burnett's *Official Report on the Fever which appeared on board H. M. Ship Bonn, &c.* Lond. 1824, p. 42.

cases advancing towards convalescence. Her berth was not particularly unfavourable. The men had limited leave, and several of them slept on shore. They were also employed in clearing out the Albert, another steamer, which, like the Eclair, had formed part of the Niger expedition, and which had remained untouched since.

On the 19th of July a case of fever was reported; and four days after the vessel left Sierra Leone, having the Albert in tow, and anchored off the coast till the 9th of August. During this time there were fifteen cases and six deaths, the latter being preceded by unequivocal black vomit. On the 9th of August, the Eclair arrived at Gambia, and left on the 15th, reaching Goreé on the 16th; and, being refused pratique, she proceeded to Boa Vista, where she arrived on the 21st, with five fever cases on board. The number of these now increased so rapidly, that on the 31st the crew was landed on a small island two miles from the capital (Porto del Re), the sick being placed in the rooms of a dilapidated fort; and the well in tents pitched along the walls, or in apartments separate from the sick.

Here, however, the disease continued to extend, and the mortality, far from diminishing, became more alarming. In consequence of this, the crew was reshipped on the 13th of September, and the vessel steamed for England, having been previously cleaned, and, as it was supposed, purified. But the fever, which from the 9th to the 13th had appeared to assume a less violent character, acquired additional malignancy as soon as the vessel reached the open sea. After touching at Madeira, on the 20th, where she was refused pratique, she arrived at the Mother Bank on the 28th. During the passage from Boa Vista, forty-one cases occurred; out of these twelve ended fatally. After the vessel had reached the Mother Bank, nine fresh cases and five deaths—all traced to the vessel—were added to the list, including the pilot, who had come on board but a few days before, and a medical officer, Dr. Rodgers, who had been sent to attend the sick.

The question of the introduction of the fever into Boa Vista, which has given rise to an animated controversy, is foreign to the object of the present inquiry, and must, therefore, be passed by unnoticed.

The disease from which the men suffered while on the coast of Africa was undoubtedly the common remittent fever of the country. All the cases, as we have seen, with the exception of two, were supposed to have been traced to exposure in boats. These two had not left the ship. Dr. Bryson[1] is of opinion that they may have derived the disease from the emanations from the shore, to which, notwithstanding the distance, they must have been more or less exposed. Dr. King, in his report, has expressed his doubts on the subject, remarking that it is not clear that the remaining seven of the seventeen who were attacked, had been employed in the boats, and inclining to the belief that the cases were due to causes located in the vessel. But however this may be, and whatever may have been the nature of the disease thus produced, and which had ceased before the vessel reached Sierra Leone, there can be no difficulty in deciding that the fever which prevailed on board *after* the vessel left that place, bore the characteristic marks of true yellow, and not of common African remittent fever. Whether, with Dr. McWilliams,

[1] Report on the Climate and Principal Diseases of the African Station, p. 184.

we are to view the disease as having been originally of the latter kind, and as having changed so much for the worst during the passage from Sierra Leone to the Gambia and Boa Vista, and especially while the crew were at the fort, as to assume the character of yellow fever, and acquire contagious properties, or whether, with Sir W. Pym, we are to conclude there were two distinct fevers on board—marsh fever, in April, May, and June, and the true bulam, or yellow fever, from the 23d of July (the day she left Sierra Leone) to the time of her arrival in England—are questions upon which it is unnecessary to dwell here. Certain it is that the fever could not have been the result of imported contagion. At the time the Eclair lay at Sierra Leone, up to the day of her leaving for the Gambia, there existed no epidemic condition of the atmosphere at that place; and, although the rainy season had commenced, there prevailed no fever from which that of the ship could have been derived. On this we have the testimony of Dr. King, who subsequently learned, when he visited the place, that there had not been anything unusual at that time, either in the nature or amount of disease in the settlement. "It is not hinted that the sailors were exposed to infections from persons actually labouring under the disease; indeed, it is not certain there was a single case of sporadic yellow fever previous to their arrival. I am at a loss, therefore, to understand how its origin can be explained on the principles of contagion," (p. 11.) The cases which occurred after the departure of the vessel, could not, therefore, have been carried from the shore, and served to disseminate the disease afterwards. Nor is it less obvious that the absence of an epidemic at Sierra Leone forbids the supposition of the vessel having carried thence a tainted atmosphere capable of affecting the crew during the rest of her melancholy history, or of the crew having imbibed a quantity of poison, which, after remaining dormant in their system, broke out at different times, up to their arrival in England. And yet, as we have seen, from the day of the Eclair leaving that port, to the 9th of August, fifteen cases occurred on board; and from the 19th of July, when the first case presented itself, to the 31st of August, when the crew were landed at Boa Vista, forty-four cases and sixteen deaths were reported. These cases must have been derived from causes existing on board; for no idea was entertained, up to that period at least, that the disease was propagated by contagion; and it is admitted, by Dr. McWilliams himself, that it did not manifest such property prior to the arrival of the vessel at Boa Vista. Even admitting that the crew and officers could have imbibed the poison at Sierra Leone, the disease by which some of them were attacked during the close of the passage, and especially on their arrival at Boa Vista, could not have been the result of such an exposure, inasmuch as the time which elapsed between that period and the moment of the attack, was too long to explain the occurrence on the principle of incubation.

"Without assuming at present," as Dr. King justly remarks, "that there were any just grounds for believing that the cause or causes of the fever had

a local origin in the ship, it may be inferred that the idea was entertained by the superior officers, or they would never have attempted to clean the holds at Sierra Leone in the rainy season, and within one month have again commenced the same laborious work at Boa Vista; and it is equally improbable (but from some apprehensions of the kind) that they would have removed the men from the ship, and lodged them, at that hot season, in such a miserable place as the fort at Boa Vista." P. 11.

When we take into consideration the continuance and increase of the fever on board—when we learn that after the crew—the sick as the well, had been landed at Boa Vista, a lieutenant, the paymaster, the purser, and the clerk of another vessel, the Growler, were ordered, on the 7th and 9th of September, to survey the infected steamer, and that of these officers, the lieutenant, purser, and clerk were severely attacked—the second when actually on board, though there was nobody there to communicate the disease;[1] when, besides, we find that the pilot, who came on board in England, took the fever, though he did not communicate with the sick, had brought his bedding, and had not slept below; that some men who were employed to clear the hold in England, after the crew had been transferred elsewhere, were attacked with the disease in a mild form; and finally, that the sick, when removed, did not communicate the fever to any of their attendants, we may safely conclude that the latter arose from the foul state of the hold. Were it necessary to adduce additional reasons for arriving at this conclusion, we could find them in facts furnished by the subsequent history of the vessel, and which show that, notwithstanding all the efforts that had been made at Sierra Leone, Boa Vista, and England, to cleanse and purify her, she long continued in a foul state, and was again, in consequence, the seat of malignant fever. Weeks or months after the people had left the ship, and when she was recommissioned, a large collection of mud, fully three inches in depth, was found on removing the engine, under that portion of the bottom occupied by the boiler and machinery, which apparently had not been disturbed for a long time.[2] The steamer left England for the Cape of Good Hope, on the 23d of February, 1847. Soon after sailing, a man was attacked with fever, which, though at first of a mild character, assumed malignant symptoms after the ship had entered the tropics. When off the Island of St. Nicholas, and almost in sight of Boa Vista, the man died, having had, for two days previous, black vomit, and other characteristic symptoms of the yellow fever. Within a few days afterwards, the steamer arrived at Ascension, where Dr. King was then stationed, with several new cases of the same disease on board.

[1] Burnett, *Official Correspond.* p. 74, and *Edin. Med. and Surg. Journ.* Oct. 1847, p. 495.

As there had been occasional cases of fever in the Growler (Steward, in *Official Corresp.* p. 89, and *Edinb. Med. and Surg. Journ.* Oct. 1847, p. 509), those adverted to may not have really originated in the Eclair, though it would be strange that, while there was no disease in the Growler, three out of four officers who had visited the other vessel should be attacked, if the cause did not reside in the latter.

[2] Bryson, 223; King, 12.

"The patients themselves," as we are informed by Dr King, "attributed their illness to foul air in the fore part of the ship; one of them said he suffered so much from an abominable stench in the boatswain store-room, that he represented the circumstance, and obtained permission to cut a hole in the floor, which exposed to view a considerable quantity of soft mud; and five or six buckets full of it, mixed with decayed shavings, and emitting an offensive odour, were removed at the time."[1] Pp. 12, 13.

In all these instances the disease was traced to communication with the vessels concerned; or to exposure, at a greater or less distance, to the atmosphere contaminated by the effluvia issuing from them. In none was it due to the introduction of a contagious germ through the agency of the sick, merchandise, or effects; in all, the febrile poison was generated on board. Were it necessary, similar examples of this mode of origin might be adduced from the history of the British vessels—the Childers;[2] the Isis;[3] the Ferret;[4] the Scylla;[5] the Thracian;[6] the Iphigenie;[7] the Wasp;[8] the Tribune;[9] the Farmer;[10] the Bustard;[11] the Pylades;[12] the Antelope;[13] the Tigris;[14] the Scamander;[15] the Brazen;[16] the Busbridge;[17] the Pompey;[18] the Bedford;[19] the Powerful;[20] the Blossom; the Kent;[21] the Circe;[22] the Trinidad;[23] the Ser-

[1] Dr. John Wilson remarks, in his Statistical Report on the Health of the West Indian and North American Squadron, that the progress of clearing, perfectly cleansing, and then restowing ships of war in the West Indies, with the view of guarding against invasions of fever, are common; but it is a fact, however startling or difficult of explanation, that they are very generally followed, in no long period, by a serious visitation of the disease. "What relation there is between the purifying process in question and the subsequent eruption of fever, if it be an operative relation, may never be satisfactorily known; that the one frequently, generally, follows the other is certain," (p. 85.)

This occurred on board the Blossom (surveying ship), in 1835, while off Balize. "No fever of the kind existed at Balize, or any point of the Bay of Honduras, at the time it broke out in the Blossom, nor does any appear to have occurred during its cruise," (p. 85.) The same result was observed on board the Forte (frigate), in 1835. P. 110.

"When the holds of the Growler were opened at Woolwich, after her return from the coast of Africa, two men who slept directly over the hatchway were seized with fever, possessing all the characteristics of yellow fever, and in the course of a few days they both had black vomit, and died in the Marine Infirmary, where they had been taken at the commencement of the disease."—Bryson, p. 224; Burnett, *Official Correspondence on the subject of the Eclair*, p. 71.

[2] J. Wilson, pp. 159–160; Birnie, Edinb. Med. and Surg. Journ. vol. xiii. p. 333.
[3] Ibid. p. 154. [4] Ibid. p. 161. [5] Ibid. p. 161. [6] Ibid. p. 140. [7] Ibid. p. 142.
[8] Ibid. p. 92. [9] Ibid. p. 92. [10] Ibid. p. 92. [11] Ibid. p. 92. [12] Ibid. 92.
[13] Birnie, Edinb. Med. and Surg. Journ. vol. xiii. p. 335. [14] Ibid. xiii. p. 335.
[15] Ibid. [16] Ibid. [17] Brice on Yellow Fever, p. 19.
[18] Dickson, Report in Bancroft's Sequel, p. 172, 3 (*note*).
[19] Blane, ii. p. 118; Sir W. Burnett on the Bann, pp. 28–29.
[20] Wilson, Statistical Report of the Health of the Navy, p. 85.
[21] Burnett on the Bann, pp. 32, 33.
[22] Dickson on the Yellow Fever; Edinb. Journ. xiii. p. 48. Bancroft's Seq. 140.
[23] Johnson on Influence of Tropical Climates, first ed., p. 164; Bancroft's Seq. p. 211.

pent;[1] the Pilot,[2] and others; but enough has already been said on the subject to place the question of that origin beyond the possibility of a doubt. Nor have French writers on the yellow fever been less explicit in the expression of their belief in the reality of the generation of the poison on shipboard, or less careful in recording facts in illustration of it.

More than a century ago, Desportes regarded the disease as arising often from the foul condition of ships, and attributed the escape of a vessel, the Jason, of 74 guns, in 1746, at St. Domingo, to its extremely leaky condition, by which the sources of exhalation in the hold were submerged.

"Although," he remarks, "the quantity of the water pumped out of the hold of a ship may not appear to be a sufficient cause of disease, yet it must become so, and contribute greatly to that effect, when the constitution of the season aids in increasing the exhalations, which fill the air with noxious principles."[3]

Dalmas[4] relates the case of the Souverain, a 70 gun ship, in which the fever broke out, and prevailed extensively during the passage from Europe to the West Indies. In this case the fever attacked more readily and was more fatal to the artillery men and soldiers who slept on the lower deck. Those who slept on the gun-deck were less severely treated; while those employed in the rigging, as also the officers, escaped almost to a man. These facts, when taken in connection with the circumstance that the disease commenced at sea, and without the vessel having communicated with contaminated ships in port, show that the cause of infection was located in the hold.

Dr. Chervin's documents contain several examples of the generation of the yellow fever at sea, before the infected vessels had reached West India ports.[5] Rochoux[6] refers to several interesting instances of a somewhat similar kind. The following is worth recording:—

The brig Le Messager, forming part of the West India squadron, under the command of M. De Menars, was sent, in 1817, to St. Martin, to collect wood. The hold of the vessel was filled with mangroves. But the effluvia arising from these trees occasioned such a degree of infection, that in a short time the greater part of the crew were attacked with fever, and many died, and among them the captain.[7]

This case is the more interesting to us, as the relator, while properly referring the disease to the effluvia arising from the mangroves, labours hard in the volume quoted, and in other publications, to establish a distinction between the fever of tropical climates and that of Europe and this country,

[1] Bryson's Statist. Report of the Health of the Navy (British), p. 101.

[2] Ibid. p. 116. Second Report on Quarantine, &c. p. 67.

[3] Histoire des Maladies St. Domingo, i. p. 162.

[4] Recherches Historiques et Médicales sur la Fièvre jaune, 2d ed. p. 84.

[5] Rapport lu à l'Académie Royale de Médecine, sur les documents de M. Chervin, p. 9.

[6] Recherches sur les différentes maladies qu'on appelle fièvre jaune, pp. 151, 2.

[7] Ibid. p. 61.

attributing the latter to local infection, and the former to the mere action of heat.

We read of the brig Fabricius, of Marseilles, in which the yellow fever broke out at sea before it had reached Fort Royal, during the sickly season of 1818, and which arrived there on the 29th of September with several sick on board.[1] The distance at which this vessel was from the coast at the time of the outbreak of the disease, forbids the idea suggested by Kéraudren,[2] that the infection was due to the wafting of the effluvia from the shore.

We read also of the Columbia, which arrived at Marseilles from Rhode Island in 1802, with the yellow fever on board;[3] and of the Nicolino, which suffered there in 1821 from the same cause.[4] In neither of these vessels could the disease have arisen from any but local causes. As regards the former especially, the idea of a foreign source is inadmissible; for the Columbia had sailed from Rhode Island, where, as we know well, the disease did not prevail at the time of her departure.

The French brig of war the Euryale, commanded by M. Villaret de Joyeuse, was attacked with the yellow fever while on a cruise, and compelled in consequence to seek shelter in Fort Royal, Martinique, about the close of June, 1821. Before reaching that port, the Euryale had already lost six men, and among them the surgeon, and at the time of her arrival the sick-list was very large. The sick were sent to the hospital, and the convalescents removed to Fort Bourbon. In neither of these places was the disease communicated to the attendants or others; but, on the other hand, a number of men who were sent to work on board were seized with the fever, and several died. In this, as in other instances, the disease did not extend beyond the focus of infection where it had originated, and where it affected those who exposed themselves to its action.[5]

Dr. Lefort, to whom we are indebted for the above case, adduces (p. 16), as additional proof of the local origin of the yellow fever on shipboard, the account of three other vessels of war, the Egerie, the Diligente, and the Silene, which, during the sickly season of 1821, anchored at Trois Islets, a port situated at the bottom of the Bay of Fort Royal, Martinique. During their stay, the Egerie was attacked with fever and lost a great many men. She was ordered to sea; but the disease increasing instead of being arrested, she re-entered the port, and there went through the usual process of purification. While the Egerie was at anchor at the Trois Islets, the intercourse between her and the Diligente and the Silene was in no way prevented; notwithstanding which, these vessels remained perfectly free from the disease. On the 19th of October, the Diligente proceeded to Fort Royal, and soon after was itself attacked with the fever. On the 30th, she was ordered to sea in company with the Silene, and during the passage from Martinique to Porto Cabello, but more especially after

[1] Lefort, Journal Générale de Méd. Nov. 1820; ibid. Réponse à Kéraudren, pp. 29, 31.

[2] *Loc. cit.* p. 31.

[3] Robert, Guide Sanitaire, 708.

[4] Ibid. 244, 622, and Broussais's Annals, Oct., 1821. Robert, Observations sur la Fièvre jaune importée à Pomegues en 1802, 1804, 1822, p. 132. See two interesting letters on the subject, by Dr. Ségaud, in Berthe's volume on the Yellow Fever of Andalusia, p. 395.

[5] Lefort, Réponse à M. Kéraudren, p. 13; ibid. Journal Universel des Sc. M. Oct. 1821; ibid. Obs. des Sc. Med. du Marseilles, v. 208; vi. 311.

a week's sojourn in that place, suffered extensively from the disease. During the whole of this time, the Silene continued free from the infection, although daily visited by men from the suffering vessel. It is scarcely necessary to remark, that if the Egerie had derived the disease from the atmosphere of the Trois Islets, or from contagion, the Diligente and the Silene would, being exposed to the same causes, have shared a similar fate; and had the Diligente not suffered from the action of some cause inherent to the vessel itself, it is difficult to understand how its companion, the Silene, could have escaped so effectually the inroads of the fever, exposed as it was to the same atmosphere, communicating in the same way with the shore, and visited frequently by the crew of its infected companion.

To the same effect, we have the case of the brig Donostierra, at the port of Passages, in the autumn of 1823. This port, in the province of Guipuscoa, is situated at the bottom of the Bay of Biscay, and forms a sort of appendage to St. Sebastian. The entrance to it is between precipitous rocks, and is so narrow and oblique as to be with difficulty discovered. The town, whose population is very small, consists of one street, placed on a shelf of rock, so narrow that it does not admit of the passage of carts, and scarcely of horses, while the base of the Mountain of Olearso is almost in contact with the houses, which are badly ventilated, filthy, dark, and crowded.[1] This vessel sailed from the Havana, with a clean bill of health, in the beginning of June. The crew consisted of twenty-two men, including the captain, and there were besides five passengers on board. As to the cargo, it consisted of sugar, coffee, tobacco, yellow wax, honey, and preserves. Ten or twelve days after being at sea, one of the sailors died of an acute disease, which, however, the captain denied to have been the yellow fever. "After a passage of thirty-five days, the vessel touched at Corunna. The captain reported this event to the medical junto, in consequence of which the vessel was ordered to quarantine ten days. At the expiration of this time it proceeded to St. Andars, remained some days in that port, and next directed its course to the Passages, where it arrived on the 2d of August," two months after leaving the Havana. During the whole of that period, the crew and passengers had remained in good health, and as at the period of arrival there were no sick on board, and as she had been at Corunna and St. Andars, she was not here put in quarantine. The cargo was discharged on the 6th of August, and for several days a great many people went on board without contracting any disease. On the 19th, carpenters were employed in removing some of the planks of one of the sides, which were found greatly decayed. The first individual attacked with the fever was a custom-house officer who had slept several nights on board. He sickened on the 15th, and died on the 17th. The carpenters were soon all affected, and the greater number of them died. On the 23d and 24th, two women who had communicated with the vessel during the week, and who occupied a house situated close by, were attacked, and died. From this moment the disease spread to all the houses in the vicinity of the vessel, which was evidently the source of the infection.

It would require more than an ordinary degree of faith in the doctrine of importation to attribute this outbreak of the fever, at the time of the occurrence, to intercourse with the passengers and crew of the ill-fated vessel. Two months and a half had elapsed since they left the Havana, and they had all arrived in good health. Independently of this, during the prevalence of

[1] Second Report on Quarantine. Yellow Fever. Lond. 1852.

the disease, nothing transpired capable of proving its contagious character. It follows, from the account we possess of this visitation, that the disease did not extend beyond the houses opposite the ship; that when individuals were attacked, whose habitations were at a distance, it was occasioned by their having remained for some time within the space to which the malaria from the ship appears to have been limited; that the heat was excessive, the thermometer reaching to 96°, and the course of the wind favoured the conveyance of the effluvia from the ship; that many individuals, evading the sanitary regulations, passed out without certificates of health, and took with them clothes, even from the houses where people had died; and that neither these individuals, nor the sick that were conveyed to different parts, nor the effects that were carried out, communicated the disease to the surrounding country or elsewhere. Nor can we attribute it to the cargo, as it had not infected any one on board who had assisted in unloading the vessel, and had, besides, been removed before the commencement of the fever. More rational is it to refer the cause to the foul condition of the vessel itself—a condition not attributable to the miasma with which the hold was impregnated, and resulting from the cargo and crew, since the former were innocuous, and the latter, had they been infected, were not located in the hold, but in the cabin and steerage, which were not the seat of the infection; but to the state of the timber, &c.; for the disease did not manifest itself until the sides of the vessel had been opened and the decayed wood exposed. The custom-house officer, it is true, died before this operation was performed; but from the nature of his duties he was obliged to visit every part of the vessel, and was therefore exposed to the direct action of the deleterious effluvia issuing from the interior of the vessel, even before the decayed timber had been fairly uncovered.[1]

The following case, the last I shall adduce, affords a strong illustration of the sudden development of the disease on board of ships while at sea. It has often been briefly referred to, but deserves a more particular notice.

In the year 1802 (12 Floreal, an. 10), a flotilla, filled with French troops, sailed from Tarentum for the Island of St. Domingo.[2] The vessels consisted of small Neapolitan polaccas—under the escort of a frigate—each of which, though only intended for the accommodation of at most one hundred men, received one hundred and fifty (p. 7). Encountering, soon after leaving the port, a severe storm, the vessels were dispersed, and sought shelter where best they could. They reassembled at Leghorn, and thence proceeded to Cadiz, there to join another division of troops that were to form part of the expedition. Stopping again at Carthagena, to take in proper provisions and to refit, the expedition set sail for St. Domingo—the troops being now transferred to eight

[1] Arruti Tratado de la Febre Amarilla, &c.; p. 1–70. Notice topogr. du Port du Passage où la F. J. a regné pendant les mois d'Août et Sept. 1823, par E. L. Jourdain. Broussais's Journal iv. 505. Abstracts of this in Med. Rev. of Phila. i. 260. Journal Générale, 86, pp. 225, 231. Audouard, Relation Hist. de la F. J. qui regné en Port du Passage, 1823. Rev. Méd. Août, 1824. Chervin, Examen, &c. p. 31, &c.

[2] Béguerie Histoire de la Fièvre qui a regné sur la Flotille Française, sortie du Port de Tarente, p. 5. Montpellier. 1806.

vessels freighted for that purpose. Of these vessels, one was set apart for the accommodation of the sick.

The spring had been cold and wet. Summer came on suddenly, and was characterized, during the months of June, July, and August by intense heat (p. 10). Soon after the departure of the vessels from Carthagena, fever broke out on board, and continued to prevail in some of the ships till their arrival at Cape Haytien—spreading more extensively and acquiring greater malignancy as they approached the tropics and were exposed to a higher temperature. The disease, without doubt, consisted of one of the forms of true yellow fever; but exhibited, especially at first, a mild character. At the time of arrival, the yellow fever, in all its purity, was prevailing among the troops at St. Domingo, and by comparing the symptoms presented by the cases on board with those noticed ashore, the surgeon of the squadron was enabled to convince himself of the identity of the two diseases (p. 21).

In this instance, there cannot be the remotest reasons for referring the disease to any other than a local origin. Nothing is said of the soldiers having imbibed the cause of it at Leghorn, Cadiz, or Carthagena, in neither of which places, indeed, it existed that year. Dr. Beguerie lays some stress on the effects of bad regimen, but especially on the excessive heat to which the men were exposed; as also on vicissitudes of temperature and exposure to night air (p. 21); but he likewise attaches much importance to the morbid exhalations arising from the accumulation of the troops and the decomposition of animal and vegetable substances contained in the vessels (pp. 21, 24, 36, 88). It may not be improper to add that the disease manifested no contagious property (p. 73).

Enough has now been said to show clearly and undeniably that the true yellow fever has often been generated on board of ships under circumstances which forbid the idea of its having been the effect of contagious germs therein introduced, or of malarial effluvia wafted from contaminated vessels lying in the vicinity, or from infected localities on shore. It is easy to understand, that such examples of development must prove not a little embarrassing and annoying to thorough contagionists. A perusal of their writings will show that, with a few honourable exceptions, they deny the production of the fever anywhere on land, through the agency of local sources of infection, and necessarily feel no disposition to make an exception in favour of such sources when located in ships; or, if they admit the possibility of such a mode of origin, they limit the sphere of its occurrence within comparatively narrow bounds, rejecting, as unfounded and even absurd, the idea of including within these any section of the temperate zone. It cannot be matter of astonishment, therefore, that, entertaining such views, they should, as already seen, have denied *in toto* the truth of the statements made on the subject before us, or, when this proved impossible, endeavoured to explain them away on principles harmonizing with their opinion respecting the etiology and mode of propagation of the disease.

Be this, however, as it may, the facts presented in the preceding pages, and which have been collected from sources entitled to full confidence, are of

a nature to overcome effectually, all the objections raised against the reality of the generation of the yellow-fever poison on shipboard. They furnish us the means of repelling the assertion sometimes hazarded by less exclusive partisans, that if the disease truly arises spontaneously in ships, it does so only in such parts of tropical climates where it is endemic; that there it is, perhaps, the effect of atmospheric influences—seldom, if ever, of local sources of infectious effluvia; that when perchance it appears in vessels lying in ports situated in temperate regions, those vessels have arrived from such localities, or from places infected by communication with them, and that the fever has been derived directly or indirectly from tropical climates, and not from any cause eliminated on board. All this is refuted by the fact that in some of the cases cited, the fever has broken out in ports situated in temperate regions under circumstances incompatible with the idea of importation, and even in vessels coming from parts of Europe where the yellow fever has never existed; that in others the fever has made its appearance at sea before the vessels had reached tropical latitudes, or in vessels proceeding from one port situated in temperate regions to another of the same kind; and that, in not a few, the connection between the appearance of the fever and the existence of materials which elsewhere give rise when in a state of decomposition to febrile effluvia, is too apparent to be doubted. Some of the facts adduced equally disprove the assertion that the development contended for takes place only, or principally, in vessels containing individuals who had recently visited sickly ports, or had there been affected with the fever; or, as it is at times maintained, that it occurs only in vessels lying within the influence of infected ports in tropical regions, and is to be referred to such influences; for in some of the instances described or referred to, the effect took place in vessels—as the Hornet, Blossom, Eclair, General Greene, Delaware, Levant, Mary, Columbia, Antelope, Kent, Circé, that had sailed from, or were lying in ports where the fever, if it ever prevailed, did not exist at the time, or had not done so for some, or even many years before, and which, therefore, were not likely to contain any individual who had recently, if ever, passed through the disease, or who could in any contingency have derived the latter from morbific effluvia emanating from surrounding objects. Not less opposed to the assertions in question, are the cases of the Fabricius, Thracian, Lively, the French flotilla from Tarentum, &c., in which the fever appeared at sea, during a cruise or passage, and far from any contaminated spot; as well as those of the Pique, Nancy, Scout, Diligente, Rattlesnake, Ferret, General Greene, Macedonia, Pyramus, Nyaden, Lively, Pylades, Bedford, Kent, Pilot, and Seringapatam, in which, while those vessels were severely visited by the fevers, others situated close by in port, or at sea, or on the same cruising-ground, remained uninjured. In the first of this category of cases the cause of infection could not have been derived from surrounding objects, and must have been located in some parts of the vessels themselves; in the other, the complete escape of other ships exposed to the same influences from the shore, and the restriction

of the disease to one, is, to say the least, a strong reason for regarding it as an intrinsic product of the latter itself or its contents, and not of effluvia derived from an extrinsic source, at the place where it was lying, or whence it had just sailed.

The foregoing statements furnish us, moreover, with materials to disprove the idea, sometimes entertained, that the disease, when it breaks out on board of ships without its being traced to an immediate exposure to contagious effluvia, will be found to do so very usually, if not always, in vessels in which it had existed at some antecedent period sporadically or epidemically; and that hence it is simply the effect of a revivification of germs left there at the time of the preceding visitation. Such assertions receive no support from the history of the very large majority of instances mentioned, for in them the fever made its appearance unexpectedly in vessels in which it had never existed before; while in the few which had been infected at some antecedent period, the occurrence was of too ancient a date to justify the supposition that the development of the disease could in any possibility be due to the cause assigned. Such a supposition would imply the admission that the germs of that form of poison giving rise to the yellow fever can remain for months or years in a state of latency in the human system or in surrounding objects, and be brought at last into action through the agency of some exciting cause. Need I remark that, notwithstanding all that has been said on the subject by Currie, Bally, Pariset, Arejula, and others, the existence of such a power of retention has never been verified on land, even under circumstances the most favourable to such a result? And surely, if it does not there manifest itself, it would be difficult to point out the most distant reason why it should do so on board of ships.

But even were there no other cause for disbelieving the extrinsic and contagious origin of the fever in the instances before us by the revivification of germs or otherwise, the opinion of that origin may properly be rejected on the ground that the disease produced on board has not been found to be communicated on shore. It will be found on examination that individuals affected in the Rattlesnake, the Euryale, the Regalia, the Peacock, the Pyramus, the Levant, the Vestal, the Bedford, and the Blossom, were landed and received into hospital wards in various places, and, that notwithstanding the freest intercourse was allowed, the disease was not in a single instance communicated to those around.[1] Nor need we hesitate to affirm that when the various instances

[1] "At Barbadoes," says Dr. Ferguson, "our hospitals of late years have been in a regular course of importation of the yellow fever from the navy; but not even inoculation has been able to produce the disease upon any member of the hospital corps, by whom, I may truly say, that the sick have been received with open arms; for the anti-social doctrines of ideal contagion are not preached among us here to the prejudice of duty and humanity."

Another respectable authority, Dr. Magrath, principal medical officer of the Public Hospital in Kingston, Jamaica, remarks in relation to this subject: "Yellow Fever has

of contagious communication alleged to have proceeded from such contaminated vessels in this country and elsewhere are carefully scrutinized, they are found destitute of proof, and are more readily explained on other principles.

Even the case of the Eclair, upon which so much stress has been laid by the advocates of importation, loses, when examined attentively, the importance it has acquired. While those who went on board took the disease with almost unerring certainty, it remains yet to be proved that those affected communicated the infection on shore. So, as Dr. Wilson, a competent authority on such matters, remarks, "it happens, if not universally, almost universally. Nearly every man who joins a ship in such a condition has the prevalent disease sooner or later; but no number of persons taken from such a ship, labouring under the disease in any stage, or in any force, and placed in a situation where the disease does not exist, though in a mass of healthy people, can excite it in a single instance."[1]

We also see that exposure to the effluvia issuing from the hold during the cleansing and purifying process in ships, heretofore uncontaminated or very long free from the fever, and after the crew had been dismissed, and no one was left on board to communicate disease, has often been, not in tropical and fever regions only, but in temperate climates also, the cause of the most concentrated and fatal form of malady. In a word, the facts that have been adduced establish, beyond the possibility of a denial, the reality of the development of the yellow fever on shipboard, from the operation of causes existing therein, and unconnected with any contagious or infectious germs introduced from without.

When we bear in mind the peculiar nature of the localities in which the yellow fever usually appears, and the almost constant connection observed between the development and prevalence of the disease, and the existence and particular condition, in those localities, of certain materials, animal or vegetable, or both combined, and at the same time revert to the particular condition

not for several years prevailed as an epidemic in Kingston, but occasionally we receive patients suffering from it into the Public Hospital. In 1848, the crew of a vessel that had a few months previously been employed in carrying guano suffered most severely; and in 1849, the persons on board two coal ships, which, after discharging their cargo took in some impure ballast, were attacked with yellow fever in its most virulent form, whilst all the other vessels in the harbour remained nearly free from the disease. The sick from those ships were placed amongst the other patients in the hospital."

"Dr. Magrath informs me," reports Dr. Melroy, "that nearly twenty cases of aggravated yellow fever were received from those two vessels (the holds of which were found to be in the foulest state imaginable) into the hospital, and a very large proportion of them proved fatal. None of the other inmates or of the attendants of the hospital were affected. Moreover, there was no prevalence of the disease on shore at the time."—*Second Report of the General Board of Health on Quarantine in* 1852, p. 33.

[1] Wilson, Statistical Report, p. 110.

of the vessels in which the disease made its appearance, as well as to the thermometrical and other influences existing at the time, there can be no valid reason for refusing to admit the reality of such developments; while, at the same time, we discover a satisfactory explanation of the manner in which they are brought about. As the disease requires invariably for its production a long continuance of high atmospheric heat, and as it is on that account most generally encountered in tropical, or during the hot season of temperate climates, we can readily understand why it more frequently occurs on board of ships in the former, where, besides, these usually contain materials susceptible of decomposition, and which, when acted upon by the high temperature they there encounter, are soon productive of noxious exhalations. In merchant and other vessels engaged in the West India, South American, or African trades, the cargoes consist almost exclusively of articles susceptible of fermentation or putrefaction; while the same vessels, as well as ships of war, are apt to be ballasted with materials alike liable to those injurious changes, and which, together with portions of articles provided for food, chips of wood, shavings, and dirt of all kinds that inevitably find their way—sometimes in unaccountable quantity, into the hold of vessels, where, meeting with more or less moisture, supplied by leakage, or the water used for purposes of cleansing or purification, or the drippings of the casks, or other sources, they form a mass which, under the influence of intense heat and a still atmosphere, become the source of concentrated miasmata. By one well versed in all matters of the kind, we are reminded that it is not always possible to account for the dirt and rubbish which may be found in the bottom of a ship.

"Fragments of wood, vegetable substances, and dirt of all kinds, however, gravitate by the formation of the vessel towards the kelson or limbers; where, by the heat of the climate and the action of the salt-water, they rapidly decay, and form a blackish mud, not dissimilar to that observed among the roots of mangrove thickets on the banks of the rivers within the influence of the tides; it sometimes even acquires a consistence sufficient to block up the passage of the limbers. In small vessels, with a flying deck, there is less difficulty in accounting for the presence of foreign matters in the hold; dust, fluids of various kinds, the sweepings and scrapings of the decks, and a thousand other things, will find their way there, notwithstanding the greatest care, both on the part of the officers and men, although the latter, nevertheless, are frequently wilfully careless in this matter."[1] In steamships the difficulty is still greater, in consequence of the boilers and engines occupying a large portion of the floor of the hold, which cannot be got at.[2] All this filth, in the concentrated state mentioned, may and often does exist in vessels, although the decks and other parts apparent to the eye are clean. In them the cause of offence, though hidden, is not less real than in vessels differently conditioned, and proves often detrimental to health before it is suspected to exist. Of course, all foul ships are not necessarily unhealthy; but those that escape are the exceptions.[3]

[1] Bryson, p. 222. [2] Ibid. p. 223. [3] Ibid. p. 223.

Nor is it less worthy of remark that the very timber of which vessels are constructed, especially when green or not perfectly seasoned, may be, and has not unfrequently been, when acted upon by the high temperature of tropical climates, the source of noxious effluvia. At any rate, such a condition of vessels has not unfrequently been associated, in hot climates, with the development of the most malignant form of the disease; and, judging from what has been noticed on land of the effect of exhalations from kindred sources of infection, or at sea, from the stowage of damp green wood, we cannot err greatly in attributing the mischief, in the instances in question, to the decomposition of the ship's timbers. On this subject, the facts related by Dickson, Wilson, Rochoux, and others, leave no doubt, or, at any rate, merit serious consideration. The unhealthiness of ships built of green timber has always been noticed, and we have seen that the epidemic on board the Regalia and Messenger was evidently traced to a quantity of green wood stowed in the holds of those vessels.

We all know, also, how offensive the bilge-water becomes from admixture with the filth of the vessel; or the great tendency that the water, which finds its way by leakage or otherwise into the hold, has of being decomposed; sometimes owing to its original impure state, at others, to its combination with the fresh-water proceeding from the drippings of the casks, &c. It is not to be denied that such a condition of the bilge-water is not necessarily connected with the appearance of the disease on board of ships; cases having been adduced in which the foulest and most offensive water has proved innocuous; while disease has raged where the odour was hardly, if at all, perceptible.[1] But such cases are not frequently encountered; and, when so, find their prototypes on land, where the appearance of malarial fevers is sometimes connected with an apparently pure condition of water, partially covering marshy swamps, or with an absence of mud or filth. More generally the reverse takes place, and, even were this not the case, the appearance of the disease may still be due to internal miasmata issuing from other sources of infection; or, again, the water, though completely or almost inodorous, clear, and apparently pure, may nevertheless contain in solution those particles of poisonous matter which produces the fever.

May we not adduce, as a further proof of the local origin of the disease from sources of miasmal infection, the example of those vessels in which the spread of the disease has been arrested, even in tropical climates, or during the hot season of temperate regions, by a resort to a thorough process of expurgation? We have seen that the fever was arrested in the Dart, Pyramus, Regalia, and Palinure. In the case of the Trinidad at Barbadoes, mentioned by Dr. James Johnson (164, 1st ed.), the fever disappeared as soon as the hold was washed and cleaned, the dirt, filth, and stagnant water removed,

[1] Bryson, p. 224.

and scuttles cut for better ventilation. Some officers, by the early adoption of proper hygienic measures, particularly of those calculated to insure cleanliness, and prevent the accumulation of sources of impure exhalations, have succeeded in guarding their vessels, under the most unpromising circumstances, against the development of fever. While other vessels were sorely visited by the disease, Capt. Smith, of the British Navy, never had it in those under his command during long service in the Mediterranean. Like him, many others have preserved their crews by having "the holds of their vessels washed out daily by means of plugs till the water came out perfectly clear, so that an accumulation of filth could not take place."[1]

Whether the infection proceed from the effluvia issuing from the bilge-water, the timber of the ship, the filth of the hold, or the cargo, the existence of the cause within the precincts of the ship, particularly in the hold, is rendered evident not only by the circumstances already mentioned, but by the limited space and the particular spots to which it is confined at the outset, or throughout the whole extent of the epidemic. The disease usually, or very frequently, makes its appearance, and is more severe in the vicinity of the pumps and main hatchway. This is exemplified by the occurrences on board of the General Greene, the Macedonia, the Rattlesnake, the Rainbow, the Force, the Skipjact, the Ferret, the Scylla, the Lively, the Isis,[2] and is nothing more than what might be expected; for there the keel is most dependent, the water draining from other parts is accumulated, and the heat is most intense. Thus the first cases, and the largest rate of mortality, have, in many instances, been found to occur in the berths of the midshipmen and marines, which, in English frigates, are placed on each side of the pumps and main hatchway. By Dr. Wilson we are told, that the subsequent progress of the disease depends on the trim of the vessel, and the inclination of the keel from the horizontal position; the fever spreading in the most dependent parts. In almost all cases, the disease prevails more, and the risk of infection is greater, in the lower than in the upper deck. It is sometimes confined to one end, or one side of the vessel.

From these facts, and the appearance of the disease under circumstances which preclude the possibility of referring it to the operation of external agencies, or the introduction of contagious germs, we arrive at the conclusion, already so often mentioned, that its development on board is often due to causes existing in the vessel itself, and brought into action by the long-continued heat of tropical regions, or the equally high temperature of the summer season of temperate ones. Nor is this all. As the sources of noxious effluvia, to which the disease is then evidently due, are identical in nature with those with which the development of the fever on land during the hot season of temperate regions is usually associated, we arrive at the no less

[1] Lond. Med. Gaz. ix. p. 890.

[2] Wilson's Statistics, p. 110.

natural inference that such developments are there due to these effluvia, and not to importation from abroad.

Whether such an importation can be admitted as within the bounds of possibility, need not be made the subject of inquiry here. I shall dismiss it, therefore, with the remark that, so far as I have been able to ascertain, there is no reason to regard the disease as possessing, under any circumstances, a contagious character; and that, consequently, its development can in no case be ascribed to the arrival of individuals labouring under it, or to the contagious germs they have left in ships, or which the latter have imbibed in sickly ports. Very different is the case with vessels in which the disease has been developed spontaneously, and of which the cargo, or timber, bilge-water, filth, &c., constitutes the source of infection; for by these the disease, or its cause, may be, and has been, introduced into healthy places, and communicated to those who have gone on board, or approached sufficiently near to be placed under the influence of the effluvia issuing from them. But such an introduction differs materially in its consequences from the former; for the disease resulting from it will cease when the imported source of infection has been removed; while in the other case it is perpetuated by passing from one individual to another, and spreads long after the removal of the vessel to which it owes its origin. Hence it is the prevention of the admission of vessels so conditioned into healthy ports, and of the exposure to the effluvia issuing from noxious matter, contained or imported in foul vessels, that should constitute the principal object of quarantine laws, and not the guarding against the introduction of disease by contagion; for there is no cause, as long ago urged by a sensible writer, for detaining a ship on account of the danger of yellow fever, which is itself in a pure state, from whatever port she may have sailed, or however sickly that port may have been. On the other hand, no ship in a foul or offensive condition, or whose cargo is in a putrid state, however healthy the port whence she sailed, or the persons on board may be, should be permitted to enter the town, until it has been thoroughly cleaned and purified, or has passed through the ordeal of frosty weather. But in no case should the passengers and crew, whether healthy or not, and whatever be the danger of their being attacked after leaving the ship, be detained in quarantine; for there is no fear of their transmitting the danger to others, and of the disease being perpetuated by them.[1]

PHILADA. *Jan.* 1853.

[1] N. Am. R. 10.

ART. IV.—*Extracts from the Records of the Boston Society for Medical Improvement.* By WM. W. MORLAND, M. D., Secretary.

September 27, and October 11.—Cases of Arrest of Development, Blemishes, etc., in Infants, attributed to Strong Mental Action in the Mother, while Pregnant; Disagreeable Sights; Sudden Shock, &c.; Discussion upon the Question whether such Action of the Mind be ever a Cause of such observed Results.

CASE I. *Arrest of Development attributed by the Mother to a Fright during Pregnancy.*—Dr. STORER reported the case. Several months since, a female patient of Dr. S.'s expressed some anxiety respecting her sister, who expected shortly to be confined, and who could not be persuaded that she would not have a deformed child. Three or four weeks after her marriage, she was much affected at seeing a hen injured by a stone thrown by a boy—the stone broke one of its legs, and removed the lower portion. She was exceedingly troubled at the time, and as her pregnancy advanced, continually dwelt upon the subject, insisting that her child when born would be found to be deformed. Her friends at last began to feel some concern as to the result, and hence the reason of Dr. S. being consulted. A few weeks afterward, Dr. S. heard from his patient that her sister had been confined, and that one foot was wanting; that, immediately after her delivery, the mother asked to see her child; one foot was shown her as being natural, and an effort made to divert her attention from the child; but she could not be pacified until she saw the other limb, continually insisting that she knew it was deformed. Dr. S., being very anxious to see the child, requested that he might know when it should be brought to this city.

Since the last meeting of the Society, he has had an opportunity to examine it. The child, perfectly well formed in other respects, exhibited upon one of the lower extremities, simply a heel and the rudiments of the five toes, at the extremities of which were placed microscopic nails. Dr. S. observed that he was led to refer to this case from the peculiarities of the patient's conduct previous to her confinement. It was not an uncommon circumstance for a mother, *after* the birth of a deformed child, to account at once for the defect by something which had occurred during her pregnancy; but he believed it to be very rare for a patient to dwell upon the subject for months *previous* to her confinement, and immediately upon her delivery insist upon seeing her offspring to prove her conviction.

Dr. BIGELOW, Sen., remarked that very many of these cases are referable to afterthought of the mother. Women are often anxious in regard to the possible deformities of their offspring, and there are few pregnant women who escape seeing some peculiar and even disagreeable sight or objects during their gestation; any marks observed would, therefore, be coincidental, *by the rule of chances:* in ninety-nine out of a hundred pregnant females, no untoward results would be observed. Dr. B. does not believe it possible that an arrest of development can arise from the action of the imagination of the mother, or from the effect of sudden disagreeable impression on her mind. It is not infrequent that mothers inquire *whether their child be perfect;* at all events, the *frequency* of deformities after any shocking sight is the *test* of the truth of the existence of such *cause* for deformity. Dr. B. believes that if one hundred pregnant women were to be exposed to the action of such supposed causes, or

should experience any of the strong and peculiar "longings" of pregnancy, no blemish would be thereby produced in the children.

Dr. CABOT referred to the fact that, during the siege of Antwerp, there were very many *stillborn*, and a large proportion of *deformed* children.

Dr. DURKEE asked, if this theory of the influence of mental impressions on the pregnant female does not find support in certain analogies observed among animals? He referred to Old Testament narration (*Genesis*, chap. xxx.), and added that remarkably similar facts may be observed at the present day in the breeding of animals.

Dr. JACKSON said that very likely there might not be one in a thousand, exposed as suggested by Dr. BIGELOW, in whom unfortunate results would follow; *all* are not *equally susceptible* of such influences—some not *at all so:* the *special* cases, however, are not to be explained or ridiculed away; there is enough of plausibility, if nothing more, in the view he sustains of the matter, to render women cautious of needless exposure to unpleasant sights in the *early months* of pregnancy.

Dr. J. added that, from the cases he had seen, or heard of upon good authority, he was inclined to believe that a malformation in the fœtus may be induced by an external cause operating upon the mind of the mother during her pregnancy, and, further, that the malformation may bear to the cause some relation or resemblance. This last has always been a popular notion; but is regarded, on the other hand, by the scientific, as perfectly absurd; the presumed cause operating upon the mother at a period of pregnancy when the fœtus must be too far developed, it is said, for any such malformations as have been referred to, to be produced. There is, moreover, no nervous communication between the mother and the fœtus. The number of negative facts is numerous beyond account; of cases, that is, where a sufficient cause, according to the above hypothesis, existed for malformation, and yet none occurred. No possible explanation can be offered for the production of a malformation by the presumed cause; nor will it be possible, until we know much more than we do of the obscure subject of the physiology of the fœtus. The resemblance between the malformation and the cause, it is said, is a mere coincidence; but, upon the common doctrine of chances, the coincidence is too remarkable to be explained away so readily, and, if one case is suggestive, a second adds very great weight, and a third is almost or quite conclusive. M. St. Hilaire (*Anomalies de l' Organisation*) believes that some monstrosities, the anencephalous for instance, owe their being, in some cases, to the operation of a strong moral cause upon the mother; but he does not believe in any resemblance in the particular malformation to the exciting cause, and for the reason above mentioned. It would have been well had he stated at what period of pregnancy the mothers, in his cases, were subjected to the causes that led to their monstrous births. Another remark often made is that pregnant women do not predict the malformation, but, when it is discovered, look back for some cause to which they can refer it. This might be questioned; but, allowing that it is so, and even that they had ceased to think of the assigned cause, it does not follow that it had not operated efficiently at the time; the impression was made upon the mind of the mother, and through it upon the fœtus; the one was soon effaced; the other remained. Much would depend upon the character of the exciting cause, and much also, as he had before remarked, upon the *susceptibility* of the individual to the receiving and the retaining of impressions. Dr. J. then reported the following cases:—

1. Several years ago, he saw a young lady, about thirteen years of age, of rather a small and delicate figure, and whose middle finger upon one hand

was fully equal in size to that of a man's; the corresponding metacarpal bone being also decidedly enlarged, and even the forearm somewhat so. The finger was itself well formed, as in some other cases of similar malformation that have been observed here. The hand also was otherwise well formed.

The mother of this young lady, during her pregnancy, was obliged for a long time to dress a felon or whitlow for an old uncle, the finger affected corresponding to the one that is malformed in the case of her daughter; and the operation was always disagreeable to her, as she was a woman of a particularly nervous temperament.

2. In November, 1846, Dr. J. saw an infant with an extensive blood-mark, as it may be called, upon one of the upper extremities. The mother, whom he has attended for several years, and knows to be a woman of very susceptible feelings, gave the following statement: When two and a half to three months pregnant, though not at the time aware of her situation, she had been out of town for the afternoon, when, on her return, as the cars entered the depot, she saw a man who had been recently killed. He was lying upon his face, with his head turned to one side, the sleeve of his coat torn entirely off, the whole upper extremity exposed and more or less bloody, and so twisted, as she supposed from dislocation at the shoulder, that the hand lay upon the upper part of the back. At this sight she nearly fainted, and probably would have entirely, if she had not had two of her children with her. For at least a month afterwards she was decidedly ill; and during the remainder of her pregnancy she could not banish the thought from her mind; she also felt that there would be great danger in regard to the child in utero, though she never expressed her anxiety upon this point to any one. The extent and degree of the discoloration of the skin were not fully recorded by Dr. J. at the time; but, having recently seen the mother, she informs him (for the child has since died) that it extended from the back of the hand and towards the thumb, where it was most marked, upwards along the extremity to the shoulder, and even somewhat upon the neck. It was not equally marked throughout, being in some parts more or less continuous, and in others simply spotted or dotted. Her other children she has always dressed in short sleeves; but this child's arms she covered, on account of the marked deformity; and, as she says, if it had lived, it could never have worn a low-necked dress. The child itself, moreover, was so sensible of the mark that it would occasionally be seen endeavouring to wipe it off. The discoloured arm in the child corresponded, as to the side affected, with the one that was injured in the man.

3. Dr. Z. B. Adams related to Dr. J., several years ago, the following case: He attended a woman in labour, and the child was found to have one of the forearms terminating in a conical stump just above the wrist. During her pregnancy she attended for several weeks upon her brother who had had his hand torn off by machinery, and the forearm afterwards amputated; the injury being upon the same side as the malformation in the child.

4. Case reported by the late Dr. Doane, of this city. The mother of several blind children was holding one of them in her lap, when it put its finger into one of her ear-rings, drew it down forcibly, and tore it through the flesh. She was pregnant at the time; and when her child was born, it had a fissure in the ear corresponding to the laceration in its mother's.

At the next meeting, Dr. Storer said he had met with reports of two cases since the last meeting, which tended to confirm the opinion at that time advanced, that any remarkable sensation sustained by the mother during her early pregnancy, might produce an effect more or less well marked upon the fœtus in utero—that this effect need not necessarily partake of the character

of the exciting cause—but that, should the mother be so far influenced as to receive a decided shock upon her system, it might be followed by some abnormal condition of her child—arrest in development or some peculiar malformation. The following cases he had observed in the "Proceedings of the Medical Association of the State of Alabama," for Dec. 1850.

"Dr. R. LEE FEARN related the following very remarkable particulars of a case, where the impressions received by a mother during pregnancy, affected her child in utero. A gentleman, whilst shooting, shot through the metacarpal bone of his index finger. The wound was a bad one, and piece after piece of the bone came away. A few months after the accident here mentioned, and in due season, his wife bore him a child perfectly formed in all respects. When about four months advanced in her second pregnancy, an operation was deemed necessary to remove the last remaining portion of bone in her husband's finger. She witnessed the operation, and was much shocked and alarmed at the sight. When her child was born, it was found to be deficient in this very bone, though in all other particulars it was a well-formed child. The Doctor thought this was by no means the result of chance, but a very conclusive instance of cause and effect.

"Dr. DOSSEY remarked, that the relation of this case called to his mind a similar instance:—

"Dr. G—— was thrown from his horse and broke his leg, midway between the ankle and knee. His wife was about five months advanced in pregnancy. When the child of which she was pregnant was born, it had on the leg corresponding with the injured limb of the father, and at precisely the same spot, the appearance of a fracture of the limb, and there was also a decided shattering of the leg."

Dr. STRONG thought that the notion so popularly entertained in reference to this matter is too general not to have *some foundation in truth.* It certainly deserves investigation. He added that the idea of greater liability to these attributed effects, from the causes mentioned, in the *early* part of pregnancy, seemed to him very well founded; perhaps the influencing power, be it the imagination, or what it may, *ceases after a certain period of gestation;* has a *limitation.* Dr. S. also referred to the fact that a *mare* covered by a *quagga* always afterwards, when impregnated by a *stallion,* brought forth *striped colts.*

Dr. CABOT mentioned the statement of M. Donné, of Paris, who declares the above fact, as stated by Dr. Strong, to be constantly observed under the same conditions; he even goes farther, and asserts that one portion of the constitution of one man is propagated, *by another man,* from *the widow of the first to children by the second.*

Dr. BIGELOW, Sen., asked to what cause we must attribute the imperfections and arrests of development observed in fruits, flowers, and plants. Have *they* imagination? and does it act with this effect upon them?

Dr. B. declared his entire disbelief in any such effects from the attributed causes.

Dr. HAYWARD, Sen., asked whether this action or influence (if it be recognized as efficient) is *imaginative* or purely physical? Dr. H. mentioned a mother, who, while pregnant, suddenly saw one of her children, ill with pneumonia, covered with blood by some accident; the child she was carrying, when born, had a *large red stain* or spot upon its face. Here, imagination could hardly be the cause, for the woman had not thought of, or brooded over, the occurrence, nor had she any apprehension that her infant would be marked.

Dr. HOMANS spoke of an acephalous fœtus, the mother of which during

pregnancy had not ever apprehended any marring of her child. Dr. H. does not remember, since that case, any other wherein the mothers had *anticipated* any monstrosity, although such did occur. These facts he considered would militate with the imagination doctrine, or the idea of effect from strong mental impression or shock on the fœtus in utero.

Dr. STRONG remarked upon the difference between mental and physical laws in their action on the system. Some individuals have, and some have not, the imagination sufficiently sensitive and impressible for the production of such marked action as has been referred to. The *final question*, however, is whether such results are *ever* produced. If this be proved and conceded, it is sufficient to make the fact a fixed one. *One* instance thus established is enough, and as good as *ten thousand*. The numerical system is valueless upon this question.

Dr. BIGELOW, Sen., would pronounce this principle of different impressibility, &c., to be the foundation of all the charlatanry of the day. The remarks of Drs. Jackson and Strong go to prove only the possibility of these occurrences under the above-supposed theory, but do not establish their certainty. There is not sufficient basis, as he views the subject, for making a rule or law in regard to it.

Dr. STRONG asked if any one had seen so strongly marked special cases as that of the slitted ear and the enlarged finger narrated by Dr. Jackson?

Dr. HAYWARD, Sen., mentioned two cases of slitted ear; the slit being in the portion in which ear-rings are inserted. One individual, when seen by Dr. H., was 16 or 17 years of age. The mother did not remember any accident or sight possibly causative of such a result.

Dr. WM. T. PARKER related the following case, which occurred in his father's practice in Virginia, many years ago: A lady, three months advanced in pregnancy, saw a pig, driven furiously out of an inclosure by a negro boy, have *its bowels torn out* by the stake of a fence. The lady was greatly shocked, and fainted. Her child, when born, had the entire front of the abdomen *covered only by a thin film, and the intestines were visible through it.* There was also imperforate anus. The child died not long after birth.

Dr. CHANNING related the case of a lady in Edinburgh, of which he heard while there lately: Her surgeon had been performing the operation for hare-lip, and the lady's attention was drawn to some blood which chanced to remain upon one of his fingers; at her request, he described the operation to her. She was from four to five months gone with child; at birth, *the child was found with hare-lip.* The mother stated that she had been much impressed by the above occurrence and narration.

Dr. C. alluded to the fact that the umbilical cord sometimes performs amputation of fœtal limbs.

Dr. COALE said that the agency of mind upon matter cannot be denied. Sometimes the cause and the effect of nervous impressions are greatly disproportionate the one to the other. The action of these impressions on the stomach and bowels is undoubted. Dr. C. mentioned a patient under his care who, during her pregnancy, saw a deformed man, and was greatly affected and troubled at the occurrence. Previous to her confinement, however, the vivid impression subsided, to be renewed during the throes of parturition. She became very apprehensive of possible deformity of the child about to be born, which, however, presented none.

Dr. BIGELOW, Jr., thought the *negative*, as well as the *positive* evidence on this subject should all be weighed; otherwise, *fallacious results* are nearly sure. *Strong numerical evidence* and *many cases* seem to him necessary for a decision; isolated cases are insufficient.

At the meeting holden *Nov.* 8, Dr. STORER reported that he had, during the last week, delivered a woman of an infant with hare-lip; the mother, the day after confinement, told him that she had been very painfully impressed while visiting, during her own pregnancy, a friend who was dying from phthisis, and who, during her visit, had a severe and sudden attack of hæmoptysis, accompanied by distressing dyspnœa. The pregnant lady was greatly shocked, so much so as to faint; and she subsequently thought frequently of the occurrence, fearing its effects upon the child she carried. This infant was born with a hare-lip of double fissure.

Dr. GOULD mentioned, as a "set-off" case to the above, the following: On last Monday, he attended a woman in labour, who, at the birth of her child, was very anxious that its palate should be examined, she having, early in her pregnancy, seen a person with very disagreeable countenance from deformity of the palate. She had been very unpleasantly affected by the sight, but, notwithstanding her very strong apprehension, no effects are visible upon her child.

The discussion of the subject was not resumed.

Peculiar Case of Lithotomy; singular Nucleus for, and unusual Size of the Calculus.—The specimen was brought by Dr. WM. G. WHEELER, of Chelsea, Mass., who performed the operation for its extraction.

Dr. STEDMAN exhibited the calculus, and gave the following account of the case, furnished by Dr. Wheeler:—

A female, 21 years of age, came under Dr. W.'s care a few months since; she had for a long time suffered severely; all the usual symptoms of stone in the bladder were undeniably present, and, indeed, very marked. A sound being introduced by Dr. W., the presence of a calculus was readily detected. The severity of the local symptoms, and the apparent large size of the stone were the circumstances chiefly engaging attention. The stone seemed immovable, judging by the impression communicated to the sound while examining; the sensation would perhaps convey the idea of the calculus being fixed at certain points. The patient complained occasionally of great pain in the pubic region, as if something sharp pierced the neck of the bladder. Dr. W. was unable to determine the exact size of the calculus. With the hope that it might be sufficiently soft to be crushed, the operation of lithotrity was attempted. With the assistance of Drs. Stedman, of Boston, and Ingalls, of U. S. Marine Hospital, Chelsea, two trials at crushing the stone were made unsuccessfully; the bladder was contracted and irritable, so as to allow of little or no distension by the injection of fluid; and, moreover, the stone proved to be hard, and of such size and shape that it could not be held or fixed within the grasp of the instruments. The constitutional symptoms, also, which followed each of the above attempts, were severe. Dr. W. feared lest inflammation might supervene, of fatal nature, after the last trial.

Disappointed as to lithotrity, the operation of lithotomy seemed the only resource. The case was plainly stated to the friends; a preparatory treatment adopted, and the operation urged. On the 1st of October, the patient, having consented, was etherized, and the operation done by Dr. W., assisted by Drs. Stedman and Ingalls. The vagino-vesical method was chosen, as offering apparently the best chance for the patient, on account of the situation of the stone and the contracted condition of the bladder. The patient being placed in the usual position, an incision was carried downwards and backwards upon the groove of the staff; the operator's forefinger, passed through this opening, felt the stone, of large size, and apparently fixed at certain

points. Fears of a sacculated condition of the bladder were suggested; farther exploration by the finger discovered a projecting point, which was at first supposed to be a sharp corner or tubercle of the calculus; but it was finally concluded that it was some foreign body which had served as a nucleus for the calcareous deposit. Efforts to break the stone failed; and, the position of the forceps being changed, one blade was passed over the sharp point alluded to, and after much difficulty, manipulation, and delay, a stone was extracted weighing over two ounces and three-quarters, and there was found passing obliquely *through its centre, a large wire hair-pin*, measuring over three inches and a half in length. This pin, and the direction it had with regard to the incision, together with the size of the calculus, caused the delay and embarrassment in the extraction of the latter. Thus is also explained the seeming immobility of the stone at certain points.

The patient survives the operation, and has done remarkably well, with the exception that a small fistulous opening still remains. The local as well as the constitutional symptoms have been very mild, when compared with those which followed the previous attempts at lithotrity.

The history of the hair-pin is of some interest, as it gives a probable date of the commencement of the formation of the calculus. Since the operation, the patient has stated that the pin *was introduced through the urethra about six years ago.* She never mentioned this fact to any one; preferring to suffer in silence. The foreign body caused some pain and uneasiness soon after its passage within the bladder, but no severe symptoms were manifested until about two years after its introduction, since which time they have gradually increased in severity.

Dr. Charles T. Jackson analyzed the stone, and found it to be composed mainly of phosphate of lime, coloured a little with urate of ammonia. The rough surface which the calculus presents is owing to the action of the instruments during the previous efforts to crush it. The points of the hair-pin were bent down upon the side of the stone (as seen in the engraving) by the blade of the forceps, thus facilitating the extraction of the mass, and also avoiding

laceration of the bladder and adjacent parts, which had suffered so much from continued irritation.

Four months after the operation.—Dr. W.'s patient is out, and visits her friends; she has regained her usual health and strength. The fistula still remains, and has resisted all the usual modes of treatment; sutures have not been tried as yet, but will be attempted if required. A few weeks since, the opening seemed likely to close, as little or no water at one time escaped. From cold, or some other exciting cause, a small abscess formed within or near the neck of the bladder, which, in evacuating its contents, reopened or enlarged the fistula again.

November 8.—*Cancer of the Tongue and neighbouring parts.*—The following history of the case was received from Dr. J. S. JONES, in whose practice it occurred. The patient was fifty-six years of age; smoked habitually, and used brandy freely, though not addicted to intoxication. One and a half years ago his disease first appeared in the form of a small purple tumour beneath the tongue, and without pain. Six months afterwards, when Dr. J. first saw it, it had increased in size, and was ulcerated; gums of the lower jaw fungous; profuse salivation; great soreness of the parts, and severe pain in the head; this last being a very prominent symptom in the case. At this time he was attending to his business in a grocery store, but for the last three months he was confined principally to the house; the disease showing externally on each side and below the lower jaw, and breaking out into an open sore upon the right side some weeks ago. Constipation was a marked symptom towards the last. Died easily, with cessation of pain and discharge the last few days. Hereditary tendency; a sister was said to have had cancer of the womb, but died of cerebral disease; a paternal aunt died at the age of fifty-six, of cancer in the throat; and a maternal cousin, at the age of twenty-six, of cancer in the mouth.

The diseased parts were exhibited by Dr. JACKSON, who made the dissection. Externally, there protruded below the lower jaw and upon the right side, a solid tumour, one-third or one-half as large as the fist, and ulcerated upon the surface. On dissection, the diseased mass was found to be well defined, extending downwards and backwards to the top of the larynx, laterally to beyond the submaxillary gland, and upwards into the substance of the tongue; in the anterior half of which it appeared in the form of a rounded tumour three-fourths of an inch in diameter. The diseased structure was as soft as the average of encephaloid, and of a faintly yellowish white colour, but not uniformly so; cut surface rough or coarse, and presenting altogether the appearance of a cancroid affection, which it was further shown to be, from a microscopic examination made by Dr. H. J. BIGELOW; no effusion of blood as in encephaloid. Extensive and very foul ulceration beneath the tongue, and above the gum and under lip; yet no sloughing is seen. The submaxillary and two or three neighbouring lymphatic glands were healthy. Teeth in the lower jaw quite loose, but not fallen; the jaw, also, which was removed with the diseased parts, appears quite sound, excepting the absorption of the alveoli. Organs of the thorax and abdomen thoroughly examined, but no trace of cancerous disease found.

Tumour connected with the Sartorius Muscle.—Dr. J. MASON WARREN showed the specimen, which was interesting from the fact that a cancerous tumour of the breast had been removed from the patient five years ago. One of her sisters had also been subjected to an operation on the breast for an encepha-

loid tumour fifteen years since, and is now well, having assisted at the above operation. Another sister was also afflicted with a tumour of the breast. The tumour in question appeared about a year and a half since, and when Dr. W. saw it, three months ago, was four inches long and three wide, commencing just below Poupart's ligament and extending down the thigh. It was placed under the fasciæ, and was movable in certain positions of the limb.

Dr. W. was at first disinclined to advise any operation, fearing that this was a fresh demonstration of cancerous disease. On further consideration, and having repeatedly examined the patient, finding no affection of the neighbouring glands or of abdominal disease, and she being very urgent to have an operation done, he finally consented to remove it. The tumour, on dissection, was found incorporated with the sartorius muscle, which was spread out on the back part of it. This being cut away above and below, the tumour was detached from its various adhesions. When it was lifted up, in order that the dissection might be prosecuted underneath it, on cutting the saphena vein where it pierces the fascia, a distinct sucking sound was heard, as of the air being pumped into the vein. The finger was immediately placed over the mouth of the vein, and the farther admission of air prevented. The pulse remained for some time quite slow, and the patient did not revive from the effects of ether, the dose of which had been small, as readily as is usual; whether this arose from the effects of the latter agent or from the entrance of the air into the vein cannot be readily determined. The tumour, on being laid open and examined microscopically, displayed no malignant appearances, and all the organs in the neighbourhood of it were in a healthy condition, so that it is to be hoped this patient may still have an immunity from the disease.

November 22.—*Imperforate Anus, &c.*—Dr. EZRA PALMER, Jr., who attended the case, reported that the child was born on the 6th inst., and died on the 11th. Vomited, if the smallest quantity of fluid was given to it; abdomen never much distended. Passed thin yellow feces pretty freely and forcibly through the penis, but never any urine, so far as ascertained.

Dr. JACKSON, who made the dissection, showed the parts. The penis is small and otherwise imperfectly developed. Scrotum deeply divided upon the median line, like two labia; testicle felt on each side. The external appearances were shown by Dr. P. in a cast, that he had had taken for the Society's Cabinet. The large intestine was much distended, and opens into the prostatic portion of the urethra, just at or behind the verumontanum. This opening allows the passage of a small probe; but, probably from being somewhat valvular, air is not very readily forced through when the intestine is distended. Bladder rather thick, with considerable redness upon the inner surface; and, when recent, contained some liquid feces. Left kidney and renal capsule well; ureter, perhaps four times its usual size, but opened into the bladder. Right kidney and renal capsule exceedingly small; ureter was greatly enlarged, and filled with secretion, there being no opening into the bladder. It having been sometimes stated that in cases of imperforate anus there is no development of a sphincter, and that, consequently, there would be no power of retention if an opening should be made into the intestine, this point of anatomy was observed in the present case, and the muscle was found in the usual situation, and quite developed; there is also seen a sort of muscular septum upon the median line, and extending from the skin or integuments nearly to the membranous portion of the urethra and bladder. No other malformations were observed, excepting a club-foot upon one side, the corresponding extremity being rather small.

Dr. J. referred to the observation that he had often made, and which had already been published in the *Proceedings of the Society* (*American Journal of Medical Sciences*, July 1850), that such an opening as has been above described is always to be found in ordinary cases of imperforate anus, *i. e.* in those cases in which the intestine comes down into the pelvis, and there seems to terminate in a *cul-de-sac*. He now further remarked that when the anus is imperforate in a female subject, a corresponding opening, so far as he has observed, is always found from the intestine into the vagina; this part of the genital canal in the female corresponding probably with the prostatic portion of the urethra in the male. Two cases he had met with in the lower animals, besides several in the human subject; and as yet he has never seen a case of this kind of malformation in the female, where there was not a direct and free communication between the intestine and the vagina; the opening, indeed, being so free that the function of defecation is sufficiently well performed, and the individual may live to the adult age, instances of which have occurred here as elsewhere. As to cases of imperforate rectum, Dr. J. has always found the upper portion terminating in a perfect *cul-de-sac;* he had, however, heard on good authority of a case that had recently occurred in this city, and in which, as feces were passed through the penis, there must have been an opening, though it was not shown where it existed, an examination after death not being allowed.

Cadaveric Softening of the Stomach with Perforation of the Diaphragm.—Dr. JACKSON showed the specimen, taken from a patient of Dr. E. H. CLARKE; a healthy infant, twenty-two months old, that died with acute pulmonary symptoms of about thirty-six hours' duration, and had had no symptoms whatever referable to the stomach; pressure upon the epigastrium borne well. On examination, fifteen hours after death, the whole left extremity of the stomach was found open and the contents of the organ effused into the cavity of the abdomen; with a defined brownish discoloration of the surface of the spleen where it had been acted upon by the secretions. In the membranous portion of the diaphragm were two perforations through into the left pleural cavity; they were not more than two lines in diameter, and but little of the fluid had passed through. No inflammation of either serous membrane, and no softening of the œsophagus. Dr. J. remarked that he had several times met with this last, and a discharge of the contents of the stomach into the left pleural cavity; but he had never before seen an opening through the diaphragm, though it has been observed by others.

Comminuted Fracture of the upper extremity of the Thigh Bone—shown by Dr. MINOT.—There is an irregularly transverse fracture of the bone, from an inch and a quarter to two inches and a half below the upper part of the neck; a fracture through the root of the neck; a fracture through the base of the trochanter major, and another through the base of the trochanter minor, completely separating those processes.

The patient was a female, aged eighty-four, who slipped down at her bedside and fell upon the right hip. The limb was shortened about half an inch, there was slight eversion of the foot, and severe pain about the hips, aggravated by motion. The limb could be freely rotated, and drawn down about an inch below the other. No well marked crepitus was felt during life. She died in eight days. Crepitus was easily felt on rotating the limb after death.

The nature of the accident, the age of the patient, and the amount of pain,

left but little doubt as to the existence of a fracture about the hips, notwithstanding the absence of crepitus.

Fusel Oil in Phthisis.—Dr. STORER remarked, that during his last term of four months' attendance at the Massachusetts General Hospital, he had administered the fusel oil in several cases. In only two of these cases, however, had it been taken any length of time. They were now referred to, that the attention of the members of the Society might be directed to the subject; that they might test the value of the oil as a remedial agent. In the cases now noticed, although no perceptible change had been brought about in the physical signs during its use, great relief had been produced of several of the most annoying symptoms.

Susan Lynch, aged thirteen years. Ireland. Entered hospital Sept. 1st. Some dulness observed on percussion over right scapula; well-marked submucous râle; bronchophony; dulness on percussion under right clavicle; crackling, and pectoriloquy.

Ordered fusel oil, three drops in a drachm of wine, to be given three times daily.

Oct. 27. Cough lessened; weighs ten pounds more than upon entrance.

Ann Ferguson, aged twenty-two years; domestic; born in Ireland. No hereditary predisposition to disease; well until three and a half years before entering hospital, Aug. 13, 1852. After a day of hard work and exposure, took cold, and has suffered from cough ever since. Had hæmoptysis two and a half years ago, very slight; and again, about one week since, raising a few mouthfuls. Cough now most urgent in mornings. Has chills, heats, and night-sweats; has lost flesh since last spring; expectorates thick yellow matter.

Aug. 13. Dulness on percussion beneath right scapula, with increased resonance of voice and muco-crepitous râle. Also muco-crepitous râle and resonance of voice below right clavicle; expectorates a thick muco-purulent matter, a portion of which is slightly tinged with blood; nails adunque; weighs 102 pounds.

Ordered fusel oil, five drops in a drachm of wine, three times daily, immediately after each meal.

Sept. 2. Cough has diminished since taking oil; is much more comfortable; experiences no inconvenience from cough.

Oct. 8. Weighed yesterday 109 pounds, having gained seven pounds since entrance.

Dr. C. E. WARE reported a gain of ten pounds of flesh in a patient, in eight weeks, under the use of *palliatives* merely; the case being one of phthisis, and aggravated also. In three cases in which Dr. W. had used the fusel oil, it was borne well as far as the dose of eight drops; there was no perceptible effect from its use; death took place in each of the cases. Few patients can bear large doses, in Dr. W.'s experience; he now has one who takes fifty drops, *ter die;* and another who takes thirty drops as often; he has never observed pain in the bowels from the use of this medicine.

Dr. GRAY asked if Dr. Storer's patients at the hospital were *not better fed and cared for*, while there, than previously; and if this should not enter somewhat into the case as an element in the causation of increase of flesh, &c.?

Dr. MINOT, who had charge of one of the above patients, previously to his entrance at the hospital, said that his *cleanliness* was vastly improved by the change; also, that at his home, the *ventilation* was excessively bad; his food had, probably, always been sufficient.

Dr. GRAY said he had tried the fusel oil in one instance, but it proved so disgusting to the patient that it was discontinued.

Dr. HAYWARD, Sen., thought that Dr. Storer's cases must be received with a degree of caution; the change in comfort and nutrition the patients experienced at the hospital is certainly an element of importance in the treatment. To test any medicine fairly, the patients must be kept in the same hygienic condition, continuously, during its trial.

Dr. STORER said he did not wish to avow his faith in the fusel oil; nothing else was taken, however, and it certainly had a marked sedative action.

Dr. JACKSON remarked that phthisical patients do not, usually, improve at the Hospital, but the reverse; he considers the results in Dr. Storer's cases as very striking, under the circumstances.

December 13.—*Extensive Suppuration of the Liver.*—Dr. JACKSON reported the case, of which he had recently made the dissection. The patient was a healthy young man, 19 years of age, and a clerk in a store in this city. For six weeks he had had what his physician regarded as typhoid fever; the early symptoms being mild, as they so often are in that disease, so that he was not seen during the first week. The disease was, however, particularly characterized by a daily paroxysm of chill, heat, and perspiration; so that the case would rather have been regarded as one of intermittent fever, if the individual had ever been exposed to malaria; the paroxysms varying in severity, but being towards the last more marked, and leaving him then much prostrated. Under the effect of large doses of quinia they were stopped for a time. In regard to the liver, there never were any symptoms that led to a suspicion of its being diseased; no pain existed, and he could lie equally well on either side; no yellowness of the skin; a little vomiting about a week before death, but relieved at once by an emetic of ipecac.; state of bowels not remarkable.

On dissection, the liver was found of medium size, rather flaccid, and of a pale, bluish-red colour externally. Throughout its substance, abscesses were found, varying generally from one to two or three inches in diameter, and occupying altogether one-half or more of the whole organ. The contents were generally a thin, porraceous, somewhat curdy fluid, of a grayish colour, and exceedingly offensive; in many of them there was evidently more or less pus, and a few were filled with pure, thick, yellowish pus. Inner surface whitish, as from a deposit of lymph. These abscesses were quite defined; there was no induration, nor any ecchymosis about them; and the intervening substance of the liver was soft or friable, and of rather a dark red colour. The gall-bladder contained two or three ounces of thin, orange-coloured bile, with considerable grumous, bilious deposit, but no trace of pus.

At the entrance of the vessels into the liver an enlargement and induration was felt; and on cutting this across, a gush of fluid escaped from the vena portæ, similar to that first described as found in the abscesses. This vessel being then further examined, it was found to open into and lose itself in the abscesses soon after its entrance into the organ; inner surface coated with adherent lymph. Superior mesenteric vein traced for an inch after the trunk of the vena portæ had been divided, but nothing unusual was found; and so of the splenic vein, which was examined throughout, though not until some time after the parts had been removed from the body.

Just to the outside of the cæcum, and beneath the peritoneum, was a defined dark gray spot, about three-fourths of an inch in diameter, and without much, if any, induration; and from near this there extended upwards and

inwards towards the spine, a sort of chain of dark gray indurated tissue; on cutting open this last, there was found some white, opaque, rather firm substance, apparently the result of former suppuration. Though not traced anywhere near to the liver, it was suggested that it might have some remote connection with the acute disease in that organ. Veins healthy, so far as observed; as were the lungs, intestines, and other organs of the thorax and abdomen, there being no peritonitis even over the inflamed liver.

Dr. J. remarked upon the extreme rarity, in this part of the country, of suppuration of the liver; upon the latency of the disease; and upon the febrile paroxysms as a constitutional evidence that suppuration was going on somewhere in the system; the temporary arrest of the paroxysms by quinia, under such circumstances, was worthy of note.

Sudden Death. Obscure Symptoms.—Reported by Dr. PUTNAM.—A female domestic, 30 years of age, had felt somewhat unwell for a few days, but not enough so to prevent her attending to her usual work. On Saturday, Dec. 11, she washed clothes in the forenoon; in the evening, she was out visiting friends. On going to bed, had a very severe chill, which lasted a long time; this was followed by heat, with extreme distress and pain. The pain rather more severe in the side than elsewhere. During the next day, the distress was lessened, but not entirely removed.

Sunday evening, again in great pain; insisted on getting out of bed, and died in the night, while sitting up and expressing herself as feeling in some degree relieved. She had been somewhat livid during the day, and after death petechiæ appeared over the whole body, varying in size from one-sixteenth of an inch to two inches in diameter. There were no physical signs of thoracic disease.

Dr. JAMES JACKSON remarked that the severity of the symptoms, and sudden and fatal termination of the disease reminded him of the petechial fever which prevailed here many years since.

Pneumonia; rapid progress of the disease.—Dr. STORER reported the case. The patient, a young woman just married, complained of some pain in her chest and very slight cough, on the 6th inst. On the morning of the 7th, she was able to attend to some ironing. Dr. S. was called to see her on the evening of that day. At 7 o'clock, on the morning of the 8th, she died. When Dr. S. saw her she was very feeble, and had severe dyspnœa; being raised in bed for a moment, he detected extreme dulness in her right back, and the expectoration following an attack of coughing was a bloody mucus.

Spinal Disease.—Dr. GOULD reported the fatal termination (Dec. 6) of a case of which he had previously given some account (Aug. 9, 1852). The same train of phenomena continued with increasing intensity. Towards the last, the contractions, which had been mostly confined to the right limb, nearly ceased on that side, and were transferred to the left side. Spasms of the stomach also supervened, by which its contents were ejected with great violence, and without nausea or premonition. This rejection of food, together with intense pain and loss of sleep, rapidly exhausted her. Nothing gave her essential relief except ether. She used chloric ether, three parts with one part chloroform. This was given three or four times every night, and procured half an hour of quiet each time. During the three last days she was almost constantly under its influence, lying quiet, and partially comatose, rather from loss of strength than from any cerebral affection. The limbs were flexed to the utmost at death, and required the force of a man to extend them.

The spinal column having been opened throughout, there were found adhesions between the two surfaces of the arachnoid posteriorly, and also between this and the pia mater, from the middle of the cervical region downwards, and to the extent of about six or eight inches; these were formed by a sort of coarse, loose network of short, delicate, colourless, and yet strong fibres. These adhesions were not observed upon the corresponding anterior portion of the membranes, nor elsewhere; nor was there any other disease of the membranes, excepting a small, pyriform, fibrous tumour, that was found upon the outside of the theca in the cervical region. This last was supposed to contain a cysticercus or some other worm; but none was found, on careful examination. Spinal marrow very thoroughly examined; but nothing found except a slight degree of softening corresponding to the adhesions. Brain rather firm; the left lobe judged to be larger than the right. Some serum beneath the arachnoid, over the convexities; and a little in the cavity; quantity in the ventricles small. The organs of the thorax and abdomen were healthy, excepting a fatty degeneration of the liver, and a small renal calculus.

The friends have always been disposed to attribute the condition of this child to a fall which she had from the nurse's shoulder when three or four weeks old. The situation of the indications of inflammation of the spinal column would tend to support this view. Dr. G. is disposed to lay less stress upon the probable dependence of the symptoms on injury to the cranial contents during parturition than formerly. In some cases, attended with similar phenomena, and following still-birth, the child has presented the breech; in which event, no cerebral injury would be likely to occur. In many cases of difficult labour, too, the head becomes very much distorted, and remains so for many days, without the occurrence of subsequent untoward symptoms. The lesion, therefore, if any, must have arisen from the long period during which the child remained asphyxiated, a condition which occurred to all the children similarly afflicted, of whose cases he has been able to learn the history. Therefore the doubtful expediency of long-protracted efforts at resuscitation still presents itself.

Cancerous Tumour of the Breast.—Dr. J. Mason Warren related the case and showed the specimen, which had some facts of interest connected with it. The patient was 60 years old, and said that she had continued to have milk in both breasts since the birth of her first child, thirty-seven years ago. One year and a half since, the present tumour appeared under the edge of the right breast. It was now quite movable, a little painful, and was gradually increasing and becoming more attached to the mammary gland. This lady states that her mother died of cancer of the breast, and one of her sisters of a cancerous ulceration of the nose. The tumour was removed with a bit of skin which was slightly adherent to it, and a portion of the gland. It was distinctly cancerous.

Dr. W. reminded the Society of another case he had formerly mentioned of cancerous breast, in which the milk had been retained on that side for twenty years, previous to the development of the tumour.

Compound Fracture into Knee Joint. Amputation.—Dr. J. Mason Warren showed the specimen. He said that the case was instructive on account of the difficulty in deciding, at the time, whether immediate amputation should be performed. The patient, when first seen at 6 o'clock P. M., had received a compound comminuted fracture of the knee joint, an hour and a half before, from having the fluke of an anchor fall upon him. A wound existed on each

side of the joint, so that the finger could be passed from one side to the other, encountering the broken fragments of bone. The injured part was quite insensible to examination. There was a moderate but constant flow of blood from the wounds. The pulse was 120, irregular, feeble. Patient a little flighty. Stimulants were given every fifteen minutes for two hours, but with no improvement in the pulse, the discharge of blood gradually increasing from the wounds. Under these circumstances, the question which presented was, whether to proceed to immediate amputation, from fear of the patient losing his chance by hemorrhage, or to apply a tourniquet, and wait for an improvement in the symptoms. On consultation with his colleagues at the hospital, Dr. Townsend and Dr. Clark, the latter course was decided upon. On the following morning, the appearances were much the same. Pulse 120, soft. The leaking of venous blood continued. On further consultation, it was thought unsafe to defer longer the removal of the injured part. The patient was therefore etherized, and the amputation practised. The case has gone on since quite favourably.

Foreign Body in the Air-Passages.—Case reported by Dr. M. S. PERRY, in whose practice it occurred.—Mrs. S., aged sixty, was taken quite suddenly with a cough twenty-five years since. It was at the time spasmodic in its character, attended with some soreness across the chest, but no expectoration. In the course of a few weeks she began to expectorate, and from that time till about six months since, the expectoration has been profuse. Her health, which had been previously good, was much impaired; all the functions were disturbed; about six months since, while in the act of coughing, she expelled from the larynx a hard substance, nearly the size of a small white bean, and somewhat similar to it in appearance. From that time to the present, she has had no cough, and her health has much improved.

The foreign body was exhibited, and much resembled the "pearls" sometimes found, loose or attached, within the shell of an oyster.

Large Aneurismal Varix of the External Carotid Artery, and the External Jugular Vein.—Dr. PARKMAN exhibited a plaster cast taken from life, and intended for the Society's Cabinet. The patient, now thirty-five years of age, was accidentally struck, at the age of eleven, within his right ear by a small chisel. The flow of blood was profuse at the time, but was checked by pressure, and the present condition of the parts has been the result, viz., an enlargement of the external jugular vein in its whole length from the front of the ear to the clavicle, to a diameter of about two inches, an enlargement to a less degree of the common and external carotid arteries corresponding in situation, with manifest thickening of their coats, and some slight enlargement of the veins at the temple. In front of the ear opposite to the spot where the communication between the artery and the vein may be supposed to have been made by the wound, there is a very strong pulsation, with loud purring thrill, and here the tissues over the blood are much thinner than elsewhere. Pressure, made deeply over this point, stops the pulsation, and the vein is so emptied as to be very much diminished in size. The accident happened in Glasgow, Scotland, whence the patient came a year since, and he has always been an object of interest, and has been many times examined by the different distinguished surgeons of that city and of Edinburgh, several of whom were anxious to undertake the cure by an operation. There has been no marked change for many years, and the patient did not present himself for advice, but being seen accidentally, the cast was obtained with the above history. He is

not aware of any inconvenience, but of course he is exposed to a fatal hemorrhage if any accidental rupture of the sac should take place. He declined all surgical interference, fully understanding the nature of his case and his consequent liabilities. A member having asked the kind of operation which Dr. P. would prefer in this case, he stated that he inclines to the ligature of the common carotid, rather than to that of the external carotid above and below the opening into the vein, in consequence of the change which must necessarily have taken place in the parts after the lapse of so many years since the injury; and, moreover, if it should be found necessary to perform any second operation, the previous ligature of the carotid would then be found to have been of much assistance.

December 27.—*Sequestrum from the Fourth Metacarpal Bone.*—The specimen was shown and the case related by Dr. CABOT. J. K., a German hatter, thirty-two years of age, had always been healthy; no other reason for the manifestation of the disease of the bone is apparent than the use of an iron, weighing from ten to fifteen pounds, heated to a high degree: the hand had never received a blow or any sort of injury from external violence: the latter part of last March, the patient first felt a pain in the articulation of the fourth finger and metacarpal bone, and which continued for the most of two days, it then passed off and was not noticed again for ten days, when it returned and gradually grew worse for the space of a month, when a swelling was observed between the fourth and fifth metacarpal bones, but most marked near the fourth—about three-quarters of an inch below the head of the bone. About a week after the appearance of the above swelling, the patient noticed that striking the end of the finger, or a lateral motion of the bone on the metacarpal joint, caused much pain: cold water, with a bandage, and a douche of the same was used; also, certain liniments, &c., until last October; the swelled portion of the hand was then opened upon the outside, and concrete and fluid pus, in large quantity, was discharged, and this discharge has continued ever since, through a fistulous opening. Dr. C. saw the patient first on the 21st of December; a slender probe, passed into the fistulous opening, detected a denuded portion of bone, very small; and in the middle of it, the probe, on making firm pressure, passed through a hole into a cavity within which more rough bone could be felt.

With the idea that possibly the dead portion was but small, and that it might be removed by enlarging the already existing orifice, Dr. C. did this, by means of a dentist's drill introduced into and carried along the fistulous opening; the large sequestrum exhibited to the Society was thus detected, and being found movable, the operator cut down upon the bone directly, and removing a portion of the upper wall thereof, easily extracted the sequestrum, composed of the cancellated structure of the bone, and including nearly the whole of it.

A Mass of Crude Tubercle ejected from the Mouth.—Dr. CHARLES E. WARE reported the case.—A girl, five years old, of strong hereditary tendency to tubercle, had asthma for the first time last winter. Under the use of cod-liver oil it was somewhat mitigated, but continued more or less, without much impairing the health, till warm weather. It then entirely disappeared, and the child continued well through the summer. But with the return of the cold weather of autumn, the asthmatic breathing again commenced. The general health, however, continuing good, without loss of spirits, appetite, or flesh, nothing was done until about the first of December, when a severe cold aggra-

vated all the symptoms, and Dr. WARE was called to see the child. It was then, although up and dressed, breathing with much difficulty, with loud sonorous râles, which could be heard immediately on entering the room, like a person labouring under a paroxysm of asthma. Over the whole of both sides of the chest could be heard loud mucous and sonorous râles without other evidence of special local disease. The constitutional symptoms were trivial, and the cough not urgent. Under the use of Dover's powder and mild expectorants, the symptoms were mitigating, when, about the fourth or fifth night, the child suddenly awoke in a violent paroxysm of coughing, so persistent and suffocating, that it appeared as if it must die in it. It continued, it was supposed, about half an hour. The father, who was a medical man, said, that during the paroxysm of dyspnœa, he distinctly heard some foreign body pass repeatedly up and down the trachea, producing the greatest suffocation when it was near the larynx. This state of things was suddenly relieved by the expulsion from the mouth of the mass of tubercle which was exhibited. The body was of an oval form, half an inch in length by one-quarter in width; homogeneous, and presenting to the eye, and under the microscope, the appearance of crude tubercle. The next morning the child remained in about the same condition that it had been in the evening before, and continued to convalesce as it had done before, the condition of things in no way altered by this episode. Although the child was very carefully examined before and after the attack with reference to tubercular disease, yet there was not a physical sign which indicated the presence or the discharge of such a mass as was exhibited. The physical signs were only such as mild bronchitis in an emphysematous person would occasion. Dr. WARE thought it very difficult to explain where, in the lungs, the air-passages, or their neighbourhood, such a body could be deposited, or from whence it could escape, without presenting more decided symptoms than were discovered in this case.

Abnormal Secretion from the Breast.—Dr. STORER reported the case. A woman, who had been confined five years previously, consulted him a short time since about a peculiar secretion from one of the mammæ. There had been a constant secretion of fluid from the breast since her confinement; and for several months it had assumed the peculiar appearance now presented, resembling the inky secretion of the sepia. Her system appeared feeble, and there was some slight tenderness in her breast upon pressure.

Delivery facilitated by Decapitation of the Fœtus.—Case reported by Dr. GRAY. A patient, somewhat over thirty years of age, was taken in labour with her first child in the early part of November, 1852. At the end of thirty-six hours, the left hand and arm were found protruding externally, and the head, which was in the hollow of the sacrum, was forcibly pressed against the sternum. Under these circumstances, turning being out of the question, evisceration was at once resorted to. The presenting arm, nearly filling the vulva, was removed at the shoulder; a cord wound around the finger, and thus passed completely over the neck, served to bring the child sufficiently low to render evisceration of the thorax comparatively easy. This operation being finished, together with the removal of several bones, the child, even though propelled by violent pains, made but little progress; and, after assiduous efforts for a period of two hours, decapitation was decided on. The neck being drawn fully into view by the cord, was readily divided by a scalpel. The body, by means of the remaining hand, was easily withdrawn, and the head as readily followed from the vagina—the operator's fingers being intro-

duced, without difficulty, to bring it away. The head was of the usual size, and the child was a large one.

Dr. STORER thought this a remarkably favourable result; he alluded to the great difficulty uniformly experienced in removing the separated head; he knew of but two cases besides the one reported by Dr. Gray having occurred in this city; one was attended by Dr. Channing, and, for a long time, efforts at removing the head were unsuccessful. Dr. C. removed it on the succeeding day. In his own recently reported case, Dr. S. had stated that he used great exertion for half an hour after the attending physicians were exhausted, and only continued his efforts from a desire to free them from any odium likely to follow, were the head left in the uterus: he had then succeeded.

Pneumonia; rapid Progress of the Disease.—Dr. ALLEY related the case. The patient, a female, 7 years old, of feeble constitution, was taken, the day previous to his first visit, with a cold, followed by feverishness. A dose of castor-oil was given by the mother, but the child not improving, Dr. A. was sent for, and at 7 o'clock P. M., found her suffering great dyspnœa; her skin hot; pulse frequent; auscultation detected sonorous râles on both sides of the chest, and, on the left side, a strongly-marked souffle. Revulsives were applied to the chest and to the extremities, and a mixture of syrup of Tolu with a small proportion of wine of ipecac. was prescribed—more active treatment appeared not warrantable. Prognosis doubtful. At 11 o'clock P. M., Dr. A. was suddenly summoned, and, on arrival, found that the child had ceased to breathe a few minutes previously. *Post-mortem* examination, the next day, conducted by Dr. CHARLES HOMANS, disclosed extensive inflammation of the bronchial tubes and congestion of the lower lobe of the left lung, with partial congestion of the right lung. The case is interesting on account of its exceedingly rapid progress; the child was at school on the day previous to its decease.

1853. *January* 10. *Effects of powdered Hemlock Bark applied to a chafed Neck in a Child.*—Dr. GOULD reported the production of erythema, pain, and finally sloughing, from the above application; a poultice was placed upon the sore, and the latter seemed after a time to be nearly healed, when the child suddenly refused to nurse, and soon died. Dr. G. said he did not know any reason for such an effect on the neck, except it were the *coarseness* of the powdered bark. The actual cause of death may be supposed to be similar to the shock to the system from extensive burns and other large suppurating surfaces.

Sudden Restoration of Power in a Paralyzed Arm, consequent upon a violent Effort of the Will.—Dr. BOWDITCH mentioned the case of a young woman, who had been under his care at the Massachusetts General Hospital. She was a domestic, æt. 19 years, and, in the winter of 1851–2, fell upon the ice, while carrying a basket of clothes; was confined two months with the injury, while nothing was perceptible except a slight partial dislocation of sterno-clavicular articulation of the right side. There was for months, however, constant pain in right side of trunk, and total paralysis of motion of right arm. Sensibility also much lessened; could bear without flinching the hardest pinch. Various remedies had been applied since her entrance at the Hospital, Sept. 8, 1852, with gradual relief to the side—the paralysis of the arm remaining the same. Finally, electricity was tried for several months, with occasional omissions.

January 4. The report was paralysis of arm, as before.

5th. More sensitiveness to electricity than at any previous period. The application was reduced in strength. The same evening, at supper, the patient having perceived no difference in the limbs, made a sudden, violent effort to raise the palsied limb, in order to save a cup that was falling from the left hand, and immediately the power was restored. The next day the report was, "can move fingers and arm equally well with the corresponding parts of left upper extremity; can grasp, but less firmly than with the left. Sensation (by comparison) equal in both arms; quite sensitive to a pinch."

Since that hour the patient has continued improving, and has daily sewed, using her right hand in the operation.

Cataract from Traumatic Injury. Extraction.—Dr. WILLIAMS reported the case of a man, who, while splitting wood, received a blow on the eye from a flying fragment, which dislocated the lens into the anterior chamber. He was not seen by Dr. W. till about a fortnight after, at which time the lens had become opaque. The destruction of the globe was threatened, from the inflammation caused by the presence of so large a mass in the anterior chamber. To avoid this, Dr. Williams extracted the lens through a section of the lower half of the cornea. The patient persisted in leaving the city before the wound of the cornea had entirely cicatrized; but he returned yesterday, and the union was found to have been accomplished without accident, though the cicatrix is somewhat wider than usual. There is still considerable injection of the tunics of the eyeball, and on account of this the patient cannot as yet distinguish objects, though the pupil appears clear.

January 24.—*Scrofulous Disease of Testicle.*—Dr. WILLIAMS exhibited the specimen, removed by him five days since, from a patient æt. about 35—a widower. The organs appeared perfectly healthy, till, in dressing skins, he received a slight blow upon the testes. Slow inflammation appeared to be induced in consequence; and, after a short time, a fistulous opening formed in the skin, on the left side. The left testicle was greatly enlarged and indurated. The right testis was also enlarged, but to a less extent. A constant discharge of scrofulous pus was furnished by the fistulous opening.

When cut open, after its removal, the organ seemed converted into a mass of tubercular substance, in which the process of softening had not commenced. The deposit seemed to have taken place into the seminiferous tubes, the form of which could be distinctly seen. On examination, Dr. Durkee found some of the dark granules met with in the seminiferous tubes, but no spermatozoa. Though the form of the tubes was preserved by the adventitious deposit, their structure seemed to have disappeared.

July 1, 1844.—*Pediculi from the Roots of the Eyelashes.* Cases reported by Dr. HOOPER.—Thomas Mahan, an Irish boy, ten years of age, came to the Infirmary, having been troubled for some time with an intense itching at the edges of eyelids. On examination, the ciliæ were found occupied by numerous ova, and at their roots, firmly attached to the edge of lids, numerous parasitic animals resembling the pediculi pubis; two or three specimens were detached by means of a flat probe, but were unfortunately lost before a proper examination could be made of them.

Dr. H. directed an application of the nitrate of mercury ointment to be made to the lids, but the boy never made his appearance again, and it was impossible to learn the result of the case. The mother was quite indignant at the disease being attributed to want of cleanliness.

October 30, 1844.—J. F., æt. two years, a little girl, neat and clean in her person, came to the Infirmary with her parents, who are persons in good circumstances, for an affection at the edges of lids. She had been troubled only a few days; and, on superficial examination, the disease looked like the little scabs of tinea ciliaris. The parents had, however, detected the disease. There were no ova, as in the preceding case, but pediculi firmly attached to the edges of the lids. Dr. H. removed one with some difficulty as a specimen, and directed the application of unguent. hydrargyri, and took the precaution to retain the future history of the case. The disease was attributed to communication with domestics in the family, who were fond of the child, and had her in their society a good deal.

The father informed Dr. H., next day, that the application immediately destroyed the vermin, and they fell from the edges of the lids.

January 4, 1852.—An Irish woman came to the Infirmary with an affection (inflammation) of the cornea of left eye. Observing some peculiar appearances at the edge of the upper lid, which looked like the dried secretion of the sebaceous follicles, Dr. H. remarked to the students that they resembled pediculi, and attempted to remove one; but not succeeding, in the hurry of the moment, he did not assure himself of the fact. On the 6th, the woman came again, and, assisted by a stronger light, Dr. H. detected the nature of the disease on the lid, and that it was due to the presence of pediculi thickly covering its whole edge; they were detached (a half dozen specimens) with great difficulty, so tenacious were they of their grasp. How much they had to do with the affection of the cornea, it is, at present, impossible to say.

Dr. DURKEE remarked that these pediculi appear to have a preference for those regions that are most richly endowed with the sebaceous glands and their related hair follicles. The sebaceous fluid is, probably, the favourite food of these parasites; and they can fix themselves firmly at the mouth of the sebaceous hair-follicle close to the shaft of hair, or on the hair itself, and thus take in the secretion as it flows out upon the surface. The eyelids are very plentifully supplied with the sebaceous apparatus, even in young subjects; and, in the case of the two children, related by Dr. Hooper, the insects could find a more abundant supply of nutriment from the tarsal glands than from the pubic region. In the adult subject, the desired accommodations for their sustenance and for depositing their ova are probably greater in the pubic region than elsewhere.

Dr. D. stated that he had examined, with the microscope, several living specimens of the pediculus pubis and of the pediculus ciliæ which Dr. Hooper had furnished him for that purpose, and they all appeared to be alike in their anatomical structure. They have numerous hairs, or spines, varying in length and projecting at different points from the antennæ, the body, and legs. These hairs, together with the sharp claws at the extremities of their long legs, to say nothing of their jaw teeth, give the animal great power to retain his hold wherever he may choose to establish himself—and explain the reason of the intense pruritus which these marauders produce, whether they remain stedfast in one place, or are engaged "in marches and countermarches" upon their chosen play-ground. The specimens from the eyelids are of a lighter colour than the others.

Dr. HOOPER said that he had never, himself, seen any other cases of this disease. Lawrence says he never saw but two, and quotes from Demours, that neither he nor his father ever had seen lice on the cilia. Scarpa says he had seen only one instance, but observes that cases of the same sort are mentioned by Guillemeau (*Treatise on Diseases of the Eyes*), and in *Corvisart's Journal*, August, 1812.

All seem to agree in thinking this insect the same with that of the pubis, which is thus described by Guerard. Its body is large and round, the corslet short, nearly confounded with the abdomen, its four hind feet very strong. They are oviparous, the eggs hatch in six days, and in eighteen days they have the power of reproducing. According to Cazenave, this insect has been called the pediculus ferox, from the intense itching it excites. Velpeau says the edges of the lids are sometimes invaded by the pediculus pubis, and relates a case communicated to him by Mr. Champion, in which a young peasant-girl suffered horribly from the presence of an immense number of these insects on the edges of the lids.

Good says this insect chiefly attacks the groins and eyebrows, and may be distinguished by the crab-like, cheliform structure of its legs; its antennæ consist of five articulations.

24*th*. *Ovum Blighted and Retained.*—Dr. JACKSON showed the specimen which he had received from Dr. HARTNETT, with the following account of the case: The patient was a married woman, had had other children, and considered herself as at the ninth month of pregnancy when the mass came away. She had had the usual symptoms of pregnancy, but had never had the occasional hemorrhages that Dr. J. remarked upon as characteristic of the cases that he had observed here. The abdomen was about as large as at the seventh month of pregnancy, and remained quite large after the ovum came away; apparently from tympanites.

The ovum would, probably, have been two and a half or three inches in diameter when entire, and presents the appearance usual in such cases; the whitish, dead, opaque, lymphy appearance externally; the traces of shaggy chorion upon the torn surface, and the distinct amniotic cavity; the fœtus and cord, of which there may or may not be some remains in these cases, were not to be seen; and there was no appearance to show that they had existed previously to the delivery. Dr. J. remarked upon the frequency of these cases, and the little notice that seems to be taken of them by writers on midwifery.

Ergot administered as preventative of Flowing after Parturition.—Dr. Jackson had employed the infusion of the *secale cornutum*, effectively, for the above purpose, in the case of a female predisposed to flowing immediately after delivery. Drs. Perry and Storer had thus employed the ergot.

Dr. STORER said he usually steeps ʒi of the drug; when the head of the child comes down, he gives, in such cases, one-half the amount; on the passage of the head, in one instance which he cited, *there was profuse flowing;* in from ten to fifteen minutes, the ergot produced its effect; the bleeding ceased.

Dr. JACKSON had seen effects produced by five grains of the ergot.

Dr. BIGELOW, Sen., spoke in favour of the exhibition of ergot, with the above intention; he had seen it of great service; ergot, however, is often given unnecessarily or prematurely.

Imperfect Fracture of the Body of the Twelfth Dorsal Vertebra.—Case communicated to the Society by Dr. WILLIAM D. LAMB, of Lawrence, and the specimen exhibited. The patient was a large muscular man, seventy years of age. On the 6th inst., at 1 P. M., he was in a railway car, that was thrown from the track and completely demolished; after which he was found lying upon his back, across a large stone. Having been

conveyed home, from which he was several miles distant, he was seen by Dr. L. about 4 P. M., and found to be severely bruised in different parts of the body, besides having several deep wounds of the scalp. The extremities being cold, and the pulse rather small, he took a little wine, having already taken a little brandy and water; after which he was able, with moderate assistance from two persons, to walk up one flight of stairs, across two rooms, and assist himself, somewhat, into bed. On the 7th and 8th he was quite comfortable; and once, at least, on the morning of the 8th, stood up with some assistance, and took two or three steps forwards, but was unable to use much exertion; respiration easy, though mostly diaphragmatic, this last being explained by a fracture of the seventh rib upon the left side, near its angle.

On the morning of the 9th inst., there was entire loss of the power of motion in the lower extremities, of which there had been previously observed no indication whatever. Upper extremities never affected. Having had no discharge since the day before the accident, he had taken rhubarb on the evening of the 8th, and this having had no effect, two enemata were administered; but they were at once returned, and he was further found to have lost all expulsive power. Tongue dry, and with a rough brown coat; and so remained until death. Pulse 78, and rather small. At half past one P. M. there was loss of sensibility of the lower extremities, and as high as the ensiform cartilage. Respiration diaphragmatic, but aided by the muscles of the neck. Had passed no urine since the preceding evening; there was drawn, by the catheter, one pint and a half, having an ammoniacal odour. Pulse almost imperceptible at the wrist. On the 10th, loss of sensibility to the fourth intercostal space, and no movement of the intercostal muscles below this; action of the diaphragm and cervical muscles very powerful. Half a pint of ammoniacal urine by the catheter; the secretion of nineteen hours. In the evening, one slight and involuntary discharge, having taken during the previous twenty-four hours four drops of Croton oil, in half-drop doses; some peristaltic motion of the bowels audible. Slept quietly until midnight, when the respiration was found to be more laboured; there being no movement below the third intercostal space. At 4 A. M. the pulse became irregular and more frequent. Mind clear, as it had been from the time of the accident, until half an hour before his death, which occurred on the 11th inst., at half-past ten A. M.

Six hours after death the body was examined; the spinal column being removed from the last cervical to the second lumbar vertebra. The twelfth dorsal vertebra was found broken through transversely, from before backwards, and very close to the intervertebral substance that connects it with the eleventh dorsal. On the left side the fracture extends to about the attachment for the last rib. From about the median line, and around towards the right side, nearly or quite to the processes, the intervertebral substance is broken through continuously with the fracture, but the bone is entire; and so also is the fibrous membrane that connects the edges of the bodies of the vertebræ entire to some extent from the processes forwards, though the intervertebral substance beneath is lacerated. Separation of the fracture anteriorly about two lines; the motion between the parts being considerable when the bodies had been sawed away from the rest of the vertebræ. Some blood effused into the neighbouring muscles. Spinal canal examined from the eleventh dorsal vertebra to the second lumbar, inclusive; between the theca and spine there was found an effusion of blood, less than the third of a teaspoonful, but none within the theca; between the arachnoid and pia mater, apparently, a considerable effusion of serum; spinal marrow not cut open,

being evidently uninjured, though the vessels of the pia mater were congested. Thorax and abdomen not examined.

Dr. Jackson, who showed the specimen, remarked that although there was no appearance of injury of the spine above the part that was sawed open, yet it is to be regretted that circumstances did not allow of a more full examination, as it will be remembered that the paralysis extended far above the seat of the fracture; and it may be also remarked that, though there was no complaint of pain in this last region, and no pain on pressure over the spinous processes, there was considerable pain between the shoulders from the time of the accident; his chief complaint was of his shoulder, which, by a singular coincidence, had been dislocated the day before the fatal accident. It may be questioned, indeed, whether the fracture of the twelfth dorsal vertebra was the cause of the paralysis. There could have been no displacement, the effusion within the canal was slight, and there seems to be, so far as is shown by the specimen, no physical explanation of the paralysis; concussion of the spinal marrow, it is true, is to be considered. If, however, the fracture and other injuries about the twelfth dorsal vertebra did cause the paralysis, it will be borne in mind that this last did not occur until between two and three days after the accident; and that, moreover, it proved fatal in an exceedingly short space of time. Whatever may be the explanation therefore of the case, it is one of remarkable interest, and it is a very rare form of fracture, if it has ever been before described.

Fibrous Tumours of the Uterus.—Dr. PUTNAM, who attended this patient, reported that she was forty-six years of age, had been a widow for twelve years, and had had one child seventeen years ago, the labour being severe. Menstruation habitually profuse for years, though the periods were not too frequent; and there was not much pain. No other pelvic symptoms. Death from acute and very rapidly fatal œdema of the lungs.

Several years ago, Dr. P. had been consulted by a sister of this woman, whom he found affected also with fibrous tumour of the womb; and in some other cases he had known different members of the same family to be affected with this disease.

The uterus, which was exhibited, weighed three pounds, and was perfectly buried in fibrous tumours, varying in size generally from about one to three inches. One of the largest was in the cervix; and seemed to have been originally formed in this unusual situation. Another of the largest hung quite freely into the peritoneal cavity. A third, perhaps two and a half inches in diameter, hung into the cavity of the fundus of the uterus by a small pedunele. The fibrous structure of these tumours was not so strongly marked, and they were less dense than usual; they had not, however, undergone any transformation, but notwithstanding their size and numbers, looked rather fresh and recent. Uterine cavity much elongated, and contained a quantity of bloody mucus; fundus at some points only half an inch in thickness; blood-vessels much enlarged, as usual.

A second specimen of fibrous tumour of the uterus was also exhibited; sent to the Society with a history of the case, by Dr. CHARLES GORDON. In this case there was but a single tumour, and it projected directly into the cavity of the body of the organ; it could not be said, however, to be pedunculated, the attachment being about equal in extent to the diameter of the tumour, which was estimated at nearly two and a half inches. Structure flaccid, and imperfectly fibrous. The investing layer of the uterus where it is projected into the cavity of the organ is quite thin, and at the most prominent part red-

dish, but not ulcerated. Uterine cavity considerably enlarged; parietes flaccid, and thinner than in the unimpregnated state. Neck not involved. The specimen resembles most strikingly one that has been figured by Dr. BAILLIE, in his *Plates of Morbid Anatomy* (Pl. III. Fig. 2).

The patient was twenty-eight years of age. Married six years; dysmenorrhœa, with delicate health previously. Two years after marriage she conceived; but was not aware of her situation until the fourth month, when she threw off what was called by her physician a "blighted fœtus." From this time there has been hemorrhage, with pain at the catamenial periods; and as these symptoms have been constantly increasing, she has gradually sunk under them. The hemorrhage would last for from ten to twenty days; and during the last two months it has been, as well as the pain, constant. For a time she was quite comfortable during the intervals of the uterine attacks; the appetite was good, she usually resumed her duties, and had no uterine troubles, except a slight leucorrhœa. Finally she became anemic, lost her appetite entirely, had uninterrupted nausea and vomiting, and, after eight or ten hours of coma, died. On examination, per vaginam, the uterus always seemed heavy to the touch, and anteverted to a considerable degree, so that the mouth was drawn forcibly upwards, and directed towards the rectum; to the feel, the mouth was firm and contracted.

Uterine Hydatids, connected with the Membranes of a Four Months' Fœtus.—Dr. JACKSON exhibited the specimen, which he had received from Mr. E. CHENERY, a medical student. It presents the usual appearances, but in addition, a portion of the shaggy chorion, which is quite healthy and free from the cystiform degeneration, a well-marked amniotic cavity, and within it a small portion of the umbilical cord; chorion separable, as usual, from the amnion. The cord, Mr. C. stated, was about eight inches in length; and the fœtus about seven or eight inches, plump in appearance, and altogether about as much developed as at the fourth month. A portion of the cysts only was removed; the whole amount, with the membranes, being estimated by Mr. C. at five pints.

The patient was thirty-eight years of age, and had had eight children; the last, eight months ago, was stillborn. Four months ago she again conceived; nothing unusual, except that she had every day a little bloody-looking discharge from the vagina. One month ago she took a severe cold, had cough, and from that time the discharge ceased. Trouble at the stomach, however, came on, and in another month the abdomen began to swell; this last rapidly increased, the lower extremities afterwards became swollen as towards the close of her former pregnancies, and at the expiration of three weeks, when labour finally came on, she thought herself altogether as much swollen and oppressed as she had usually been at the full period of pregnancy.

On the evening of the 20th inst., after a hard day's work, pains came on; through the night they increased, and the next morning the waters were discharged and the fœtus expelled. Mr. C. was then called, the pains had ceased; there had been profuse hemorrhage, by which the patient was very much exhausted; the abdomen much distended, and there was still some bleeding. The cord was divided; ten grains of ergot, with a little lead and opium were given; and an attempt was made to remove the placenta. After waiting for a time another attempt was made, but without success. A scruple of ergot was then given, and repeated in fifteen minutes; which was soon followed by pains, and a discharge of the hydatid mass, &c.; the uterus then contracted; and the patient has done perfectly well since.

Dr. J. remarked, that in the specimens of hydatids heretofore shown to the Society, there had sometimes been slight traces of the fœtal membranes, but nothing more; nothing that would show conclusively, as the present case does, that the mass is only a degenerated or diseased ovum.

ART. V.—*Case of Abortion, occurring at the Fifth Month of Gestation—Child born alive.* By A. W. BARROWS, M. D., of Hartford. (Read before the Hartford Medical Association, and published by its request.)[1]

November 18, 1852, 3 A. M.—I was requested by Mr. J—— to visit his wife in —— Street, he informing me, at the same time, that she was some four or five months advanced in pregnancy, and that she had for several hours been suffering more or less from labour pains. He wished me to make no delay, as the pains were then urgent. I accordingly complied with the request, and was soon at the bedside of my patient. As I entered her apartment, she was experiencing a severe expulsive pain, and when it subsided, she remarked that she was through, meaning that the fœtus was expelled. On making an examination, I found the membranes entire, containing the fœtus and liquor amnii, and wholly without the vulva. The sac, I should judge, contained at least two pints of fluid. The membranes were not ruptured for some little time, during which the movements of the child were active and vigorous. On rupturing the membranes, and exposing the child to the air, it instantly gasped, or, perhaps, I ought rather to say, uttered a cry so loud as to be heard, distinctly, at a distance of several feet, it being at the same time covered with the bedclothes. The cord was tied on its ceasing to pulsate at the end of two or three minutes, separated, and the child wrapped in warm flannels. As it continued to manifest the ordinary appearances of life, its condition was watched with much interest and care. It breathed with a kind of convulsive gasp at intervals of one or two minutes for a period of forty minutes. The heart beat regularly for forty-five minutes. The pulsations of the arteries could be distinctly seen during all this time at the top of the sternum and right side of the neck. The frequency of the pulse, I am sorry to be obliged to say, was not noted, but it was not very great. I think it did not exceed one hundred per

[1] Dr. A. W. BARROWS—

DEAR SIR: The Medical Association of this city having listened to your interesting report, in relation to a case of midwifery occurring in your practice on the 18th ult., in which the fœtus was born, as you have proved, during the fifth month of gestation, have requested me, as the Secretary, to transmit to you the following:—

Voted, That the subject of the communication just made to this Association, by Dr. Barrows, one of its members, is regarded by us as of peculiar value to the medical profession, particularly in its medico-legal relations, as it is extremely difficult to establish facts in cases of this nature, and we have the utmost confidence in the accuracy of the report, in all its details, which has been read to us this evening. In order to give so useful a paper an extended circulation, we respectfully request that a copy of it be forwarded by Dr. Barrows to the *American Journal of the Medical Sciences*, for publication.

I am, dear sir, very truly and respectfully yours,

H. HOLMES,

Secretary of Hartford Med. Association.

HARTFORD, *December* 21, 1852.

minute. I ought, perhaps, to remark here, that the respiration was, during the last half of the time, induced, in part at least, by percussion. The weight of my finger placed on any part of its chest, was sufficient to cause it at once to respire. The child repeatedly opened its mouth, and thrust forward its tongue. Voluntary motions of its extremities were occasionally made for twenty minutes or more, but they grew more and more feeble from the first, and the limbs became cool, and appeared lifeless some time before the heart ceased to act.

The child, a female, appeared every way well developed; measuring ten inches *in length*, and weighing fourteen ounces. The integuments were for the most part firm, and of a light colour; the portion covering the abdomen was thin, and of a reddish hue. The scalp presented a downy appearance, on some parts of it hair was visible, some of sufficient *length* to be elevated with the point of a knife; the nails were not fully formed, but their places were well marked out, and their rudiments plainly discernible; a slight degree of hardness and roughness could be felt in their places; the pupil could not be seen, the iris being entirely closed by the membrana pupillaris. The head possessed a considerable degree of firmness; the temporal and occipital bones appeared to be pretty well formed, the frontal and parietal were imperfect and widely apart; the muscles were small but well marked.

I have been thus minute in giving the details of this case, describing, as I have done with much care, the appearance, size, and condition of this child, for the reason that I consider it an extraordinary instance of viability. For we have here the history of a child, born before the completion of the fifth month, whose lungs played for a period of forty minutes, and whose heart continued to perform its regular pulsatory action for three-fourths of an hour. That Mrs. J——, the mother of this child, was less than five months advanced in gestation at the time of its birth, the following facts will clearly demonstrate.

On the 18th of May, just six months previous to her abortion, she met with a miscarriage, at which time I was in attendance, and delivered her of the fœtus with my own hand; some difficulty having been experienced in the extraction of the head, after the body was expelled, enables me to recall the particulars of the case; and the date found on my book, according as it does with the recollections of the patient, renders any mistake as to the time impossible. Mrs. J—— regained her strength slowly; her lochial discharges continued at least four weeks, and during a portion of the time, they were profuse. I saw her on the 18th of June, when she informed me that her vaginal discharges had considerably increased within the past day or two, so much so as to give her anxiety; they were at this time of a bright colour, having the appearance of blood. Was this the return of the catamenia? I think it was.

Active astringents were administered, but it was more than a week before the flow wholly subsided. On the 27th June, she, in company with her husband, made a short journey to a neighbouring town, where she remained several days. I am particular to mention this circumstance, as it establishes a very important point, viz., the date of the earliest period at which impreg-

nation could again have taken place. For she confidently asserts, and I have no reason for doubting her veracity, that it was during her stay in the country that she first had sexual intercourse, subsequent to her miscarriage. Mrs. J—— has been thrice pregnant. Her first child was born at the full term, is now living, and is about two years old; she miscarried with the second at six months, as above stated; child was stillborn. In each of these pregnancies she was early aware of her condition, having had nausea, headache, and other ordinary symptoms. She experienced these symptoms early in July last, and refers the commencement of her last pregnancy to that time. It would add interest to this case to be able to state the precise time when she quickened, but on this point she cannot speak with confidence; thinks, however, that it was about four weeks previous to her abortion. The motions were never felt but feebly, whereas, in her other pregnancies, they were well marked and strong. The abortion was attributed to over-exertion, particularly in washing windows, when she was obliged to reach. The miscarriage was supposed to be the result of a fall.

There are some points connected with this case which I think well worthy our consideration. The fact that Mrs. J—— miscarried on the 18th May; that her lochial discharges were profuse and long-continued; that I was called to prescribe for her on the 18th of June, when she had increased vaginal discharge, probably the menstrual flow; and that this continued for a week or more before it wholly subsided; the circumstance of her going from home on the 27th of June, to spend some days in the country, and what is of the greatest importance, that it was during her stay in the country that she first indulged in sexual intercourse subsequent to her miscarriage, enables us to specify with a good degree of accuracy the time when impregnation took place; and furnishes us with conclusive evidence that it could not have occurred earlier than the 27th of June; for we have not only the positive testimony of the parents, but also, as has been shown, a chain of circumstances so linked together, as to corroborate their testimony in a way to establish the fact beyond cavil. Now, allowing that impregnation took place at the earliest possible date, June 27, and counting from that time to the 18th of November, the time of delivery, and we find it to be only one hundred and forty-four days, or less than five calendar months. We have here then satisfactory proof that it is possible for a child, born thus early, measuring but ten inches *in length*, and weighing only fourteen ounces, to exhibit all the important indications of life, viz., respiration, regularity of the heart's action, voluntary motion, and the utterance of sound.

This case is of importance, principally in view of its medico-legal relations. It has ever been a matter of great difficulty to establish facts in cases of abortion, especially as to dates. It is not easy to prove that impregnation, in a given case, took place at a certain specified time; neither is it any the less difficult to arrive at any satisfactory conclusions as to the period of gestation, from the appearance of the child at the time of its birth. For, if we inquire

of authors, examine statistics or reported cases, with reference to the condition of the fœtus at five months, we shall find a wide difference of views expressed, both in relation to its development and viability; a discrepancy having its origin, no doubt, in the first place, in the uncertainty which usually exists as to the time when impregnation has taken place; and, secondly, arising from the unequal development of the fœtus at particular periods of gestation in different cases.

The *length* of the fœtus at five months, is, according to Burns, Hamilton, Dewees, Devergie, and Velpeau, from six to seven inches; Taylor, from six to eight inches; Beck, seven to nine inches; Maygrier, Soemmerring, and Ryan, ten inches. Beclard, after making fifty observations of the fœtus at four and a half months, states its length, at that period, to be nine inches, agreeing very nearly with Maygrier and Ryan.

The *weight* of the fœtus at five months, according to Taylor, is from five to seven ounces; Beck, nine to ten ounces; Maygrier and Ryan, sixteen; and Velpeau, seventeen ounces. These statements, in relation to the length and weight of the fœtus, have been copied from the works of the above-named authors, and from Guy's work on *Medical Jurisprudence.*

If we extend our investigations farther, and observe what is said in regard to the appearance of the fœtus at five months, in other respects; for instance, whether we shall find it with or without hair, with or without nails, &c. &c., we shall find a similar discrepancy to exist. As to the question of *viability*, most authors admit that it is possible for a child to be born alive at five months, and they are equally agreed in saying that it is extremely rare for a child to come to maturity born earlier than the seventh month. Velpeau says that the fœtus which is, according to some persons, viable at four and a half months, does not, according to others, really enjoy viability till the seventh month. Hamilton considers that all accounts of children living to maturity, who were brought forth at the fifth or sixth month, are fabulous. John Hunter says that a child can be born alive at three months, but cannot be reared if born before seven calendar months (Guy's *Med. Juris.*). Velpeau relates an instance of a woman being delivered of a child at term, and in five months and twelve days this same woman was again delivered, at the same hospital, of a child that weighed one pound and a quarter, and measured nine inches. This child lived twenty-eight hours.

"Dr. Francis gives an instance of a fœtus born at the twentieth week of gestation, which lived one hour, and weighed one pound and six drachms; its length being ten inches. Too many circumstances, he remarked, conspired to render the age of the fœtus doubtful; it was the product of a first conception, and the parties were beyond suspicion."

"The same gentleman gives another case where a fœtus, born in the twenty-third week of gestation, survived to the seventh year, and is, probably, still living."—Guy's *Med. Jur.*

Cases are reported by different persons, of children being born alive at the fifth month and coming to maturity; but, as the descriptions given of them,

correspond, in most instances, to characters usually ascribed to the fœtus at the sixth or seventh month, we should be slow in giving full credit to the correctness of these reports. It is very rare to find an instance of premature birth which is not attended by circumstances that serve to render the period of gestation doubtful; and it is only on the ground that the date of conception is accurately established, that special notice can be claimed for the case above recited.

ART. VI.—*Case of Excision of the Scapula.* By S. D. GROSS, M. D., Professor of Surgery in the Medical Department of the University of Louisville.

MATHEW GRACEY, aged forty, a gentleman of small stature and delicate frame, of a nervous temperament, and a merchant by occupation, of Eddyville, Caldwell County, Kentucky, applied to me in September, 1850, on account of an enormous tumour of the right shoulder, which he had first perceived about nine years before. His general health had always been good, and was so at the time of his visit. He was not conscious that his shoulder had ever received any injury, and no disease of a similar kind ever existed in any member of his family.

The tumour was fifteen inches in its vertical diameter, and fifteen inches and a half in the transverse. Its surface was perfectly smooth, except at one point, a little above its centre, where it was slightly tuberculated. It was hard and incompressible in its entire extent; the skin was perfectly sound, and there was no enlargement of the subcutaneous veins. By taking hold of it, it could be moved about from side to side, and lifted somewhat from the subjacent parts. Its superior limit corresponded with the shoulder-joint, anteriorly it projected into the axilla, and below it reached as far down as the ninth rib. Pressure upon the tumour produced no pain or uneasiness, except at its upper extremity, near the edge of the trapezius, where it was, and had been, quite tender for some time. During the last three months, the swelling has been the seat of a dull, heavy, aching pain, extending up the neck, and down the right arm as low as the elbow, most distressing at night, and always aggravated by the recumbent posture, probably in consequence of the pressure of the bed. The patient was unable to raise the corresponding limb without the aid of the sound one, and the shoulder was sensibly dragged forward towards the axilla by the weight of the tumour. The outline of the scapula could be distinctly traced only behind and above.

The tumour had increased rapidly within the last twelve months, and had, in great measure, disqualified Mr. Gracey for the active duties of his vocation. Four years ago, when he first consulted me respecting it, and when I strongly

advised an operation for its removal, it was scarcely the size of a large fist, and entirely free from pain and inconvenience.

Having prepared my patient's system by purgatives, rest, and a properly regulated diet, I performed the operation of excision, on the 26th of September, in the presence of my friend Dr. James Johnston, Professors Miller and Rogers, and Drs. Colescott, Raphael, Thomson, Trabue, Clark, Washington, and Murray. A full dose of chloroform having been administered, an incision, sixteen inches in length, was made from the superior angle of the scapula to the inferior extremity of the tumour, its direction being obliquely downwards and inwards. Another, beginning about five inches below the upper end of the first, and terminating about the same distance from its lower end, was then carried, in a curvilinear direction, so as to include the small oval flap of skin with the tubercle, previously alluded to, in its centre. The integuments, which were exceedingly dense and thick, especially at the superior part of the tumour, were then dissected off from the surface of the morbid growth, first towards the spine, and then towards the axilla. Having detached the elevator and trapezius muscles, I sawed through the acromion process of the scapula just behind the clavicle, and then divided the broad dorsal and anterior serrated muscles. Carrying my fingers next underneath the tumour, and raising it up, I severed its connections with the ribs, cut the deltoid and other muscles of the arm, sawed the neck of the scapula, and thus removed the entire mass with comparatively little difficulty.

Several vessels were divided in the early stage of the operation, at the posterior and middle part of the tumour; but these were easily controlled by the fingers of my assistants. Several arteries near the neck of the bone bled so freely as to demand the ligature after the removal of the morbid growth. About twenty-four ounces of blood were lost. The patient became very faint towards the close of the operation, and cordials were necessary to revive him.

The immense wound thus produced was dressed with three interrupted sutures and adhesive strips, and supported by a compress and a broad body bandage. The patient was placed in bed, and immediately took one grain of morphia.

At 4 o'clock in the afternoon there was a slight oozing of blood from the wound, and the patient complained of the tightness of the dressings, which, however, were found to be sufficiently loose. He had taken half a grain more of morphia, had slept some, and was free from pain; the pulse was 76, and of good volume; and there was no nausea, urgent thirst, or restlessness. On the following evening, September 27, the patient having slight traumatic fever, was ordered ten grains of calomel with one of opium and one of ipecacuanha, to be followed in the morning by castor-oil.

No untoward symptoms of any kind occurred after the operation; nearly the whole wound healed by the first intention; and, at the end of three weeks, my patient went home with every prospect of a long and prosperous life. In descending the Ohio River, however, which was at that time exceedingly low,

and which caused his detention upon the way for nearly a fortnight, he took a severe cold, from the effects of which he never completely recovered. A harassing cough set in, accompanied by all the symptoms of pleuro-pneumonia, which were followed, about the middle of December, by those of hectic fever, under which he gradually sank, three months after the operation.

Soon after Mr. Gracey reached home, a small fungus was noticed in the course of the lower angle of the wound, which gradually increased in size, was very red and painful, occasionally bled a little, and obstinately resisted every effort that was made to heal it by his physicians, Drs. Carson and Champion. The latter of these gentlemen writes thus in relation to my patient's general illness:—

"When Mr. Gracey got home, he had a severe cough, which he thought depended upon cold he had caught in descending the Ohio River. The cough continued to increase, becoming more and more annoying, and was soon followed by severe pains, of a pleuritic character, in the chest. These pains frequently lasted for hours at a time, and generally required morphia for their relief; in the intervals, the lungs were always much embarrassed, the respiration being quick and hurried. His suffering, in fact, was constant; he had no appetite, and could not sleep, except when under the influence of anodynes. He became excessively emaciated, and a few days before he expired his reason gave way."

It is to be regretted that no *post-mortem* examination was made, as this would, at once, have revealed the true state of the thoracic viscera, and shown whether there was any cancerous disease at the side of the fungus, or elsewhere. If Mr. Gracey really had pleuro-pneumonia, as was supposed by his attendants, and if this disease, contracted while he was detained on board a steamboat, was neglected, it is not improbable that the fungous growth was not of a specific character, but the effect merely of ordinary unhealthy action.

The neck and glenoid cavity of the scapula were perfectly sound, as were also the various muscles connected with the tumour, the posterior surface of which was covered by the spinate muscles, in a state of great expansion and attenuation. The morbid mass weighed seven pounds and two ounces immediately after its removal, and belongs to the kind of structure, usually, though vaguely, denominated osteo-sarcomatous.

ART. VII.—*Medical Topography, Climate, Diseases, &c. of Monterey, California.* By W. S. KING, M. D., Assistant Surgeon, U. S. A.

FORTY leagues from San Francisco, and upon the shores of Monterey Bay, is situated *Monterey*, probably the most beautiful village on the coast of California. In all that constitutes beauty of scenery, derived from a proper proportion of woodland, water, hills, and distant mountains, Monterey will bear

a comparison with other places of more celebrity, and its claims, in this respect, are acknowledged by all travellers. The houses (mostly adobe) are built on a broad gentle slope of land (about two miles from Point Pinos), the southern extremity of the bay. They are scattered over an extent of three-quarters of a mile, and, mirrored in the placid waters of the bay, stand in bold relief against a background of extensive forest. The hills in the rear increase in height as they run to the south-east, till, at a distance of forty miles, they are merged in the high mountains of the coast range. The northern shore of the bay is twenty miles distant, bending so far to the west, that the Pacific is not visible from any part of the town. The peninsula, intervening between the bay and the Pacific shore, is covered by a fine growth of tall and stately pines, with a few scattering oak-trees. About a hundred yards from the southern shore of the bay, on a level with it, and skirting the western edge of the town, is a low flat sandy plain, in the centre of which is a lagoon, near half a mile in length by one-eighth in breadth. During the prevalence of the high tides in the spring, the water of the bay flows into this lagoon and keeps it full; but, at other seasons, particularly at the latter part of the dry season, the water of the lagoon recedes towards the centre, leaving a good deal of vegetable matter exposed to the action of the sun, the odour from which is far from agreeable when sufficiently near to inhale it. The water of this lagoon is so brackish at all seasons of the year that cattle will not drink it. Farther to the north and east in the same plain, and nearly parallel with the shore of the bay, are two other lagoons of a larger size, at a distance of one and two miles from the town. At the eastern edge of this last lagoon, the land rises gradually by a continuous elevation about six miles, and from thence by a gradual descent to the Salinas River, a large stream emptying into the bay about ten miles from Monterey. Beyond this river are what is called the Salinas Plains, a broad level prairie of nine miles in width, extending to the San Juan Mountains.

Three miles south of Monterey is the Rio de Carmel Valley, watered by a river of the same name, which empties into Carmel Bay. The soil of this valley is rich and alluvial, adapted to agriculture. This valley and the Salinas Plains are the only points under cultivation near Monterey. Just beyond Carmel River is Point Lobos, a promontory on the coast, celebrated for the number of seals and sea-lions always to be found there.

Monterey redoubt, a few hundred yards to the north of the town, is placed upon an elevation of one hundred and forty feet above the bay. It is surrounded by a picket-work, and incloses a sufficient area for a parade-ground and a garden for the use of the troops.

On the side of the redoubt next the bay is a battery mounting twenty heavy guns. The quarters for the officers and men are built of logs neatly plastered and whitewashed, and are commodious and comfortable.

As the climate and character of disease at the fort and town of Monterey

are precisely alike, it will be understood that both are included in my remarks. The population of Monterey is from six to eight hundred, three-fourths of which are native Californians.

Climate.—The atmosphere is humid, temperature agreeably warm and equable; the prevalent winds are sea-breezes from the west and north; the land-winds from the east and south are much less prevalent, blow less strongly, and can frequently only be detected by the uncomfortable feelings they produce. There is one rainy season from November till April. This is about the average time the rains begin and terminate, although sometimes considerable rain will fall as early as October and continue until May. During this period there are frequent intervals of fine weather, of such extraordinary beauty and balmy temperature that travellers arriving on the coast might well imagine, with Colonel Fremont, that it resembled the climate of southern Italy.

During the dry season, the fogs rise from the sea late in the afternoon, float over the town and disperse usually by 9 P. M.; there is also a fog generally in the morning until 10 o'clock A. M. I may add here that these fogs are found on the entire coast of California as far south as Point Conception. In the rainy season, at which time the winds are from the south and east, there are no fogs; the sky, when not raining, being clear and cloudless. To give some idea of the temperature at Monterey, the following memoranda, extracted from the Meteorological Register of the Post is here inserted:—

Mean annual temperature for the year 1850 . .	55.00°
Coldest day, March 25 (mean for the day), . . .	39.00
Warmest day, Sept. 18, " " . . .	77.50
Highest range, September	94.00
Lowest range, December	30.00
Mean temperature for 1851	57.54
Coldest day (mean for the day)	46.50
Warmest day " "	73.50
Highest range, August	75.00
Lowest range, December	40.00

There is a difference between the mean temperature of summer and winter months of only from six to seven degrees, and hence the annual temperature is very uniform, although the diurnal changes may be considerable.

Diseases.—I have little knowledge of the diseases of this neighbourhood previous to my arrival at Monterey in the spring of 1849. In 1844, I am informed the smallpox visited this place, carrying off a large number of the inhabitants, chiefly Indians, who had not been vaccinated. At some of the Missions in California at the same period, nearly the entire population died from the same disease.

I do not know that any particular disease can be said to be epidemic to this location. The diseases from which the inhabitants are entirely free, are con-

tagious or infectious fevers (except the exanthemata), calculus, diabetes, and rabies; those from which they are nearly exempt are consumptions, dyspepsia, aneurism, and malignant tumours; and those which are mild and of rare occurrence are diarrhœa and dysentery. On my arrival at Monterey in 1849, I found hooping-cough and measles of a mild form prevailing in the town. On inquiry, I learned that these diseases were unknown here previous to the arrival of the Americans in 1846, who brought them from the States. A few cases of these complaints occurred here the following year, since which time they have disappeared; and, owing to the peculiar climate, and the prevalence of the strong and constant winds from the ocean, I do not believe they will reappear until imported *de novo*. During their prevalence, some cases of rubeola so much resembled scarlatina, that it was extremely difficult to distinguish one from the other. Some cases of scarlatina were reported to me, but I am unable to say whether they were genuine or not, not having seen them. So far as I was acquainted (and my practice was very general throughout the town), but very few cases proved fatal.

My predecessor, Dr. Murray, U. S. A., has reported several cases of typhoid fever in Monterey in the fall of 1847. These cases occurred among recruits just arrived from a protracted sea-voyage, and were no doubt attributable to the long confinement on shipboard, and the want of a proper supply of fresh and wholesome food. Since that period to the present time, I am not aware of any instance of this fever except one in an emigrant who arrived at Monterey overland, after enduring incredible hardships and sufferings, and who died shortly after his arrival.

Although, now and then, intermittents are met with here, yet in every instance, according to my experience, they were found among recruits who had contracted the disease elsewhere, or, miners who had been living in the valleys of the Sacramento and San Joaquim, where the disease prevails extensively, and who have come here for the benefit of their health. Off from the coast, as far interior as the Salinas River, a few cases are met with, but I have never known a case of intermittent fever *originating* in Monterey. The only epidemic common here is influenza, and in the autumn particularly, when the winds commence to blow from the land (which they usually do a short time before the advent of the rain) nearly the entire population become affected. I am inclined to believe that owing to the situation of the lagoons, already described, if it were not for the setting in of the rains shortly after the commencement of the land-breezes, Monterey would be much more unhealthy, it being to the leeward of the lagoons, and, therefore, exposed to any injurious influence emanating therefrom.

To the unfavourable influence of these winds the inhabitants are accustomed to ascribe an unusual feeling of discomfort and want of energy felt at this time. As many of the people live in low adobe houses, without board floors, and in many instances without windows, the only means of egress being a very low doorway, it will follow as a matter of course that these

dwellings will be low, damp, and badly lighted and ventilated. If to these causes be added coarse and badly cooked food, and the practice of the whole family sleeping in one apartment, it will not be surprising that, as a result of this mode of life alone, scrofula and summer complaint of children, and diseases of the lungs, will occasionally be found, without supposing anything in the climate disposing to the complaints. Scrofula is a disease of rare occurrence; the two latter are more common. More children die of cholera infantum and lobular or infantile pneumonia than from any other disease. These affections, as I have before observed, are produced more by modes of living than to any climatic agency. It is the custom among all classes of native Californians to clothe their children very scantily until they attain the age of four or five years. Before this period no shoes or stockings are used, the only garment worn being a short single petticoat of thin calico, and often, indeed, they are without any clothing whatever. During the rainy season, the lower extremities of the children are continually cold and damp, and as fireplaces and chimneys are unknown, their garments are seldom dry, and, in this condition, they usually sleep on mats laid on a ground-floor. To these causes are to be ascribed the catarrhal affections so common to children, and pleurisy met with frequently in adults.

Asthma is a disease of rare occurrence in Monterey or in California; I have seen but two cases in three years. The Asiatic cholera has not as yet visited this place. During the season that cholera prevailed in California, it began in Sacramento Valley; we find it in San Francisco next, and proceeding to San Jose, passing in a southerly direction to the eastward of Monterey, to San Louis Obispo and Santa Barbara. None of the premonitory symptoms of this epidemic were ever present at this place. To what cause this exemption from this wide-spreading epidemic is due, is involved in mystery. But two cases of diarrhœa and dysentery are reported in my returns of sick for the past year. It will be inferred from the foregoing sketch of the diseases of this port and vicinity, that it is a position enjoying a high degree of salubrity, and also from the fact that there are no diseases of peculiarity or importance that prominency can be given to any class of affections, or any points of striking character can enter into this account.

Before closing this paper with a brief allusion to some of the diseases of females of this region, I will barely allude to one peculiarity I have observed in the diseases, not only in Monterey, but in all California, and that is, the extreme tendency to functional disturbance of the brain. What I allude to is, the fact that in diseases, often of a mild character, which elsewhere and in similar circumstances are unattended by the slightest mental aberration are, in California, often accompanied by impaired intellect, and sometimes delirium. It is owing, I think, to this peculiarity, that delirium tremens is found to follow very slight excess in drinking, which I before supposed to be entirely inadequate to produce this affection. A contrary opinion I am aware exists to some extent here, but I believe it is founded in error, and that all who have

studied this subject will agree with me, that no one can indulge in the use of spirituous liquors with the same impunity in California as elsewhere.

Insanity, it is well known, is very frequent in California, where, it is true, the predisposing causes exist to an unusual extent, in the excited condition of the country; but how much is due to the influence of climate remains yet to be determined. In this small town are five cases of confirmed insanity of long standing.

Diseases of Females.—The diseases peculiar to females are far more common in Monterey than any other class of disorders. Of these, the most usual are leucorrhœa, prolapsus uteri, and deranged menstruation. Those affections are more numerous in proportion to the population in Monterey than in any community I have ever known.

The two first mentioned are, I believe, owing to the mode of treating parturient women practised by the natives of this place. It is the custom in Monterey, when labour begins, to place the woman on a chair in the middle of the room; a rope is fastened to the rafters above her head, which she is directed to pull. Round her abdomen a broad towel or rebosa is passed, the ends crossed behind, and intrusted to assistants, who are instructed to tighten it when the abdominal tumour descends during the pain, and *belay there* (as it were) until the arrival of the next, when it is hauled *taut* again, so as to hold on each time to the progress made, and not permit the usual ascent of the tumour after the subsidence of the pain. With the same view, a strong man is frequently seated behind the woman, who, with his hands placed on her abdomen, makes strong pressure downwards at each pain, with the idea of assisting, by mechanical force, the contractions of the uterus. All this time, the midwife (generally some old woman) is seated in front with one, and, if possible, both hands in the vagina, making all the traction in her power. When the woman and assistants are somewhat fatigued, she is placed upon her knees on the floor, but without relaxing any of the means and appliances which would cause them to lose the advantage already gained.

These measures often prove fatal to both mother and child; usually, on the termination of the labour, the female is completely exhausted. From the injury done to the soft parts by the long and rough handling, ulceration and inflammation often ensue; thus laying the foundation of uterine and vaginal diseases, with displacement of the uterus.

Immediately after the delivery, and when the poor woman is nearly worn out, and in a more or less excited state, and the nervous system in an exceedingly susceptible condition, and disposed to receive strong impressions from slight causes, it is the universal custom for all acquaintances, however slight, to visit, with one accord, the new mother; so that her room will resemble an evening party; being filled with numerous guests, who do not hesitate to sit for hours, in loud conversation, and regale themselves in smoking paper cigarettes. When we consider how much lying-in women often suffer from not being kept in a tranquil and quiet state after confinement, and how important to her well-

doing is rest and exclusion of company, we may readily conceive the unfortunate result of an opposite course, and understand why more untoward circumstances happen with such women here than ordinarily.

Within the last four years, the influence of the intelligent physician, and a few American families, have made some improvement in these matters; but, as this part of the profession is still in the hands of the California midwife, much ignorance and superstition still exist throughout the country, to an extent that could scarcely be credited in other portions of the United States.

I have heard of many causes of impaired memory charged to the influence of California climates, but I have no certain evidence that this is true; yet, judging from the complaints made by Eastern friends, and the many instances of entire forgetfulness and disregard of the strongest of earthly ties by those sojourning in California, one might readily imagine that some potent spell, like the Lethean waters of ancient story, was exerted by the zephyrs of the Pacific coast.

Although there is nothing of peculiar interest contained in the above sketch, which is the result of a residence of more than three years in Monterey; yet, as so little is really known of that locality, I have deemed it proper to contribute something, however imperfect, to add to our information of this interesting country.

San Diego Mission, California, *December* 17, 1852.

Art. VIII.—*On Stomatitis Materna.* By William H. Byford, M. D., Professor of Theory and Practice of Medicine in Evansville Medical College.

As its name implies, this is a disease peculiar to those who are, or who are about to be, mothers, and is attended with painful inflammation of some portion of the lining membrane of the mouth. Although inflammation of the mouth is a symptom considered necessary to the full development of the disease, it must be regarded only as a symptom attending a general disorder of the whole system, or at least of some one of its constituents, perhaps the blood, which by its own peculiar modification implicates the solid parts in an action which they would not otherwise take upon themselves. This view of its pathological seat, it is believed, is the only one which will enable us satisfactorily to account for many of the phenomena presented, both in respect to the time of occurrence, and the particular solid tissues mostly affected. What this modification of the condition of the blood may be, we can only conjecture; as, in the present state of science, the investigations, which have extended only to the physical and chemical qualities of this fluid, do not afford the means of

ascertaining with any exactitude many of the most important changes which occur in it.

What are its vital conditions under varied circumstances, or indeed in any case, perhaps, is entirely beyond the reach of our philosophy, and it may be, will ever elude the imperfect means of search attainable by the ingenuity of man. A deviation in the vital, physical, or chemical properties of the blood from the healthy standard, must produce effects commensurate to the importance of each, and the amount of departure from this normal state.

That there are many reasons for believing this disease to be the result of some kind of modification of the conditions of the blood, I think will be admitted by most who have thought much upon the subject. The nature of the alteration we do not now know. Could we see all the vital and chemical changes produced in the blood—for changes there must be—by the efforts of the mother's system to sustain the child *in utero*, and the necessary mutation after the process of gestation is completed, compared with its condition in health and during lactation, we might receive some light upon the subject. I apprehend that we should be taught by such instructive lessons that the character, in some respects, of change in the blood itself, would be continuously the same from the commencement of gestation to the termination of lactation; and that the effect upon the mother's energies would correspond with the quantity of the peculiar change growing out of the increasing wants of the being dependent upon her for support. And as anemia is one of the results of protracted lactation, this tendency may begin with the commencement of pregnancy. Patients not very competent to the task of childbearing and its consequences, however, often become enfeebled and thin in gestation, and continue to become more so until they succumb, or are relieved from the discharge of these duties. The same nourishing principle called for to sustain the child *in utero*, is still demanded to nourish it at the breast; and it may be a secretion in the first place, similar in character (possibly identical) to what it is in the last. This demand increases as the child grows in size and vigour, and must consist of the proximate elements of nutrition so nearly vitalized as to require none in the first instance, and in the second, but feeble powers of digestion to render them subservient to their appropriate uses. If the pathological condition of the system is that of anemia resulting from pregnancy and lactation, there must be some peculiarity about it, judging from its effects, differing from anemia arising from other causes. And this may be the peculiarity, viz., a greater paucity, comparatively, perhaps, than in any other case of anemia of the material elements expended in the process of nutrition. And this may be the case without any of the ordinary signs of anemia. From what has been said above, it may be inferred that pregnancy, as well as lactation, is regarded by me as one of the causes of stomatitis materna. Several cases have occurred in my practice in women who were pregnant with their first child, which continued throughout the remaining time of gestation and

during lactation. I remarked that all the patients in whom these cases occurred were very young, of scrofulous diathesis, weakly, and laboured under most of the symptoms of anemia resulting from other exhausting influences, such as pallor, languor, shrunken veins, &c. I think that without other influences, pregnancy and lactation are not sufficient; and hence I believe that we must look for extrinsic causes. And these, probably, are both endemic and epidemic. By the former, I mean such morbific agents as are operating in the immediate locality of the patient; for, so far as I can learn, it is not of very general prevalence. By the epidemic influence, I mean the extensive change which has taken place in the general cast of the diseases of the West, especially along the course of the large rivers, from the ordinary endemic bilious fevers, and other miasmatic diseases, to the typhoid or continuous type, attended for the most part with affections of the mucous membranes, particularly of the alimentary canal. This typhoid diathesis is so remarkably developed in many parts of this extensive tract of country, that it has usurped the place of the former diseases, or moulded them into a different type. The western physician of many years experience, can remember that in many extensive sections of country nothing was known from observation, until within a few years past, of the typhoid or continued fever. Taking these things into consideration, I think it may be inferred that a wide-spread epidemic influence has been for some time exerting its force upon the inhabitants of this portion of the country, producing a condition of the system in which there is a strong proclivity to disease of the mucous surface; and operating upon the maternal system, its effects are the tendency to this disease; just as in particular seasons, and under certain circumstances, there is a tendency to puerperal fever. There are three different varieties of this disease. The first includes the most simple variety, so far as local symptoms are concerned. It is characterized by superficial and often diffused inflammation of the mucous membrane of the mouth, which may be confined to a small part, as the lips, or end of the tongue; or it may spread throughout the whole cavity of the mouth and fauces. The parts, upon examination, are found of a scarlet red colour, and dry; but as a general thing not much, if at all swollen. This appearance may be of transient duration, lasting, probably, only for a few hours; more generally, however, for several days, when in a great many instances it completely subsides, leaving the patient to all appearances quite well, with the exception of a little debility. In some rare cases the subsidence is not so complete, and amounts only to a very considerable remission of the soreness and distress. After an uncertain length of time—in slight cases longer, and shorter in severe ones—the inflammation returns, and runs a similar course to the former paroxysm. The paroxysms usually commence suddenly, with a sense of burning or scalding in some part of the mouth—oftener perhaps on the end of the tongue than elsewhere—which rapidly spreads, involving the parts continuously, until the whole mouth feels like it had been scalded, and the acts of mastication and degluti-

tion are intolerably painful. The subsidence of the pain and suffering is as sudden and gratifying as it was unexpectedly afflicting.

The second variety seems to engraft itself, as it were, upon the diffuse and superficial inflammation of the first; for, in addition to the appearances above described, a crop of vesicles are scattered over the whole or a part of the inflamed surface. These are often so clear and transparent that without attention they may be easily overlooked; sometimes, again, they have an aphthous appearance, and are quite obvious. The duration of this eruption is about eight or ten days; but it often lasts much longer, and then consists of successive crops. The symptoms, though they subside sometimes as completely as in the former variety, the respite from suffering, is commonly shorter and less complete. In the progress of a case, it is not unusual for the appearance described as the two varieties to alternate with each other.

In the third variety, the whole force of the paroxysm is concentrated upon a small part of the surface, always, in my experience, upon the tongue. Either upon its side or inferior surface I have seen it begin by a fissure gradually leaving an ulcer, from a hardened tubercle, from the bursting of a vesicle, or simply from an inflamed point. However it may commence, a rapid ulceration destroys the substance of the tongue, until a ragged notch has half completed its amputation. Suddenly it ceases, the cavity granulates, fills up, and heals, but the organ is left distorted. The patient flatters herself, upon the cessation of each paroxysm, that some newly-applied remedy is an all-sufficient sanative against the ills which she knows, by past experience, is in reserve for her. But, unfortunately, with a returning paroxysm, she finds her suffering unmitigated. Notwithstanding this fearful ulcerative process, this variety is less dangerous, and affects the constitution more mildly than either of the other varieties. A very important consideration in connection with the local manifestation of the disease is, that the two first varieties are migratory, travelling from the mouth along the surface of the mucous membrane to all the neighbouring cavities, down through the pharynx and œsophagus to the stomach; and thence through the whole extent of the alimentary canal, frequently finding permanent lodgment in some section of this extensive tube, and destroying the patient by originating chronic gastritis, duodenitis, ileitis, &c., or passing through the larynx, trachea, and into the bronchia. And if it does not, by establishing inflammation in some portion of these tubes, exhaust the patient, it may awaken into existence the more fatal affections of the substance of the lungs. It has also followed the nasal passages into the different cavities of the skull, or maxillary antrum, and there induced permanent inflammation. At other times it travels through the Eustachian tube to the tympanum, and thence to the mastoid cells. And I have seen one case where permanent deafness of one ear and exfoliation of bone from the mastoid process occurred. The most common course for it to take, is into the alimentary canal and lungs. It is very prone to fasten fatal disease upon the lungs when it is allowed to run on for any considerable length of time.

The date of the commencement of the above local symptoms is various. Hitherto, I believe, it has been considered that they date from some time during the term of lactation, especially where the subject is young and with the first child, but that they might reappear during subsequent pregnancies; and that they never are present in pregnancies unless the patient has been subject to the disease during some previous term of lactation. I am not certain that this is the general rule. But it is unquestionably the fact that a woman will be more likely to experience such trouble after having once laboured under the malady.

Accompanying the above array of symptoms are those of a general character. Perhaps, of all others, disorder of the digestive organs is the most prominent, as well as first in importance. Difficulty of deglutition, indigestion, and diarrhœa, form a part of these. All of these symptoms, like the local, are more or less paroxysmal; the diarrhœa particularly. For some time it will harass the patient, exhaust the resources of her system, and prevent rest, and then disappear; and allow her to recruit strength, to be prostrated again by its return. Indigestion is, probably, more or less constantly present. Difficulty of mastication and deglutition vary of course with the local symptoms. Emaciation is also often considerable, and generally keeps pace with the digestive disorders. Many other general symptoms might be enumerated, but as they are not peculiar or so important, they will not be noticed. It is sufficient to be aware that such extension of the inflammation does occur, &c.

The first step in the treatment of any disease should be the removal of the cause, when practicable. In cases where more than one cause contributes to the production of disease, the removal of one of them may so far interrupt the chain of impressions as to accomplish a cure. Occasionally, this is found to be the case in the disease under consideration. The patient, by a change of her residence for the balance of the time of lactation, may get quite well. This, however, is not generally the case. And in all instances where the objections are not too weighty, the child should be removed or transferred to another nurse. I have seen so many cases of unfortunate terminations, and regard the condition of my patient so uncertain while labouring under this ubiquitous inflammation, if I may be allowed the term, in which, without any warning, the precincts of some vital organ is involved, and it becomes the seat of destructive organic alteration, that I deem it a matter of great importance to take *immediately* the most effectual course within my knowledge to place the patient under the most favourable circumstances. After an experience of nine years' duration, I cannot feel quiet while my patient, if at all seriously affected, continues to nurse her child. I am thoroughly convinced that, in many instances which I have known to be followed by fatal secondary diseases, had the connection between the sore mouth and these been properly appreciated, and the causes of it understood, the mother's life would not have been sacrificed in a useless attempt at nursing; and I am well assured that, with the best management in grave cases, there is much more likelihood of

the patient becoming worse than better while she nurses her child. I will also say that, in some cases, weaning will not of itself cure, although this is the general rule; and so soon as any of the serious complications are lighted up, little is to be expected for them from this measure. Should the case not yield to weaning, and change of residence, or should they be impracticable, or from any reason not be adopted, all that can be expected from medical treatment is that it may *palliate* the symptoms, and perhaps prevent the disease from advancing. The most obvious and urgent indication for treatment will be found in the emaciation and debility. We must meet them as best we can with tonics and proper diet. Animal food, in as liberal quantities as the enfeebled digestive apparatus will allow, must be given. Milk, eggs, and mutton I have found to agree best. First upon the list of medicines may be placed cod-liver oil, which I have been in the habit of recommending for the last three years. It must be persevered in during the whole term of lactation, and as long after as any traces of the disease exist. The dose should be regulated by the capacity of the stomach, as much being given as can be retained. This remedy has the advantage of any other alterative and tonic in its soothing effects upon the irritated bowels when this difficulty exists. This is a circumstance of the utmost importance, as we are often interrupted in the use of remedies by diarrhœa.

Where there is no diarrhœa, or between the paroxysms of it, the most useful tonic next to the oil is the carb. of iron, prepared and used according to the following formula: ℞. Carb. potass. sulph. ferri, āā ʒiss; gum. acacia mucil. ʒiv. Pulverize the potass, and dissolve in the mucilage; then pulverize and add the sulph. of iron; mix well in an earthen mortar. Dose, half an ounce three times a day, gradually increasing to as much as the stomach will bear. For persons very much reduced, of lax habit, brandy or wine taken during meals will sometimes do good. Very often they both disagree, when we may substitute ale, porter, or beer, among the malt liquors. Vegetable tonics and aromatics are useful in certain cases, where the iron disagrees with the stomach.

The diarrhœa, so exhausting to the patient and perplexing to the physician, should claim our attention also. Indeed, while this symptom exists, our efforts to restore the lost energies of the system and natural condition of the blood, from our inability to introduce effective tonics, will be futile.

Entire quietude, while this is in active existence, in the horizontal posture, should be strictly enjoined. Morphia, combined with acetate of lead, will often control it very completely. We may replace the latter remedy by sulphate of copper or nitrate of silver. These latter, when given with solid opium, often answer an excellent purpose in quieting the irritation of the bowels, and acting also as tonics to the system. Astringent injections and suppositories may be used. Indeed, in some instances, all our resources will be vainly tried to relieve this symptom. A great variety of local remedies has been put in

requisition, and all have enjoyed more or less praise. I have used with benefit a solution of sulphate of copper, of different degrees of strength, the vinous tincture of golden seal, a weak solution of nitric acid, sulphate of alum, borax, and sulphate of zinc; some of them agreeing in one case, and some with another. Perhaps among them all, a solution of sulphate of copper did good most frequently. The only way I have ever been able with certainty to adapt the local remedies to different cases was by trying them.

In conclusion, I wish to embody, under a few distinct heads, the result of my experience and reflection upon the subject. 1st. It is a disease of pregnancy and lactation, more frequently appearing while the patient is in the discharge of the last-named function, especially should it be the first child. Certainly, however, often making its appearance during pregnancy with the first child. 2d. The condition of blood probably gives origin to the local manifestation of the disease. This condition of the blood may arise from the abstraction, to too large an extent compatible with the health of the mother's system, of such principle or principles as may be necessary for the support of the child, either through the placenta or the mammæ, depraved digestion and assimilation, and other depressing circumstances connected with certain epidemic visitations and endemic tendencies. 3d. The local symptoms are irregularly paroxysmal. 4th. It makes its appearance in three distinct forms, viz. erythematous, vesicular, and ulcerative inflammation of some part of the mouth. The former two generally covering the whole internal surface of the mouth; the latter usually confined to the tongue. 5th. The first two varieties are migratory, spreading, in different cases, to all the mucous membrane continuous with the cavity of the mouth; such as that lining the air-passages, the lungs, the digestive surface, the cells and cavities of the cranium, maxillary nasal sinuses, &c.; thus producing consequences varying in gravity and other characteristics with the constitutional tendency of the patient and the amount and seat of the inflammation set up on these surfaces. 6th. The prognosis is doubtful even in cases that seem favourable, from the complications that may arise by its spreading character. 7th. That in cases of gravity, medicine will avail but little without a change of residence or nursing, or both. 8th. Cod-liver oil and tonics, especially the ferruginous, and nutritious diet, are the main hope of success in the simple form. The complicated, of course, will demand remedies suited to the circumstance at the time, and calculated for the same diseases when produced from other causes. 9th. Local remedies are merely palliative.

ART. IX.—*Coloured Prismatic Crystals in Blood-Globules.* By BENJAMIN S. SHAW, M. D., of Boston.

IN examining blood from the finger, I found coloured crystals within the blood-globules, described by Kölliker, as existing in the blood-globules of the spleen, &c., of various animals.

The blood was taken from the finger of a young man of twenty-two years of age, an officer in the army, apparently in perfect health, and who had dined heartily two hours before. It was diluted with an equal quantity of water, and a few drops placed under the microscope. The globules presented the usual appearance at first, but after about one minute, as the fluid began to evaporate, yellowish-red crystals appeared in them, having the form of four-sided prisms, with angles and edges well defined. There was generally one crystal in each globule. In some globules there were two, and these crossing each other. A few free crystals also were seen floating about in the more fluid portion. The globules themselves seemed to have their natural colour, and presented no other unnatural appearance than this. The white globules also were natural and in no excess of numbers.

These crystals have been found by Kölliker and Funke in the blood of the splenic vein, and in the spleen substance in many animals; also, in the *Cerea fluviatilis*, in the blood of the liver, kidney, and heart. They have, until recently, been seen only when a few drops of blood have been evaporated on a glass; but Funke has now succeeded, with great difficulty, in obtaining them in large quantities by the action of water and alcohol through membranes. Lehman thinks they are formed by the union of an albuminoid and a mineral substance, since they present, with the usual reagents for albumen, the same results as albumen.

ART. X.—*Sequel of a Case of Saccharine Diabetes.* By CHARLES FRICKE, M. D., of Baltimore.

IN the number of this *Journal* for July, 1852, I reported a case of saccharine diabetes, at that time under my care, with tabular observations of its pathology, and the results of treatment. The patient since that time has died; and I have thought that a brief notice of the subsequent course of his disease, and the results obtained by a *post-mortem* examination, might be interesting.

The amount of urine passed by him increased gradually, although still

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influenced to some degree by medicinal agents, and reached its greatest amount December 5. On that day, he passed eight hundred and ninety-six ounces, equivalent to fifty-six pints, or seven gallons. And the amount of sugar contained in this enormous quantity of fluid was estimated at four pounds ten ounces. He was at this time very weak and emaciated, but not confined to the hospital. During the fall, he suffered much from abscesses on the shoulder and backs of his hands; but after the invasion of cough, from which previously he had been exempt, their appearance ceased. The pus from these abscesses always contained sugar.

On December 30, he entered the hospital, complaining of cough. A few slight râles were discoverable in the right lung, but nothing else. His urine had now diminished to two hundred and sixty ounces daily. During the next week, his cough became troublesome, and some rudeness of respiration was discoverable. On the 17th of January, bronchial respiration and bronchophony were well marked throughout the upper third of the right lung, and a few days afterwards the rusty expectoration of pneumonia made its appearance. At this time he lost his relish for farinaceous food, and confined himself principally to meat. At this date some blood was taken from him by cups, but a careful examination could detect no sugar in it, although this substance was still present in his expectoration. He died January 26; the quantity of urine decreasing daily. On the 25th, he passed but one hundred and thirty ounces, containing only four ounces of sugar.

The following table is made up of the averages of sixty-seven examinations:—

Date.	Average number of analyses.	Quantity of urine in ounces.	Quantity of sugar passed in grains.	Quantity of sugar in food, in grains.	Medicine taken.	Stools.
From March 6 to April 4	5	570	14,790	25,500	Ergot grs. iij; Strych. 7	3
From April 6 to May 4	9	448	12,123	25,500	None	2
From May 5 to May 17	7	545	17,447	25,500	Creosote gtt. ij, twice daily	3
From Aug. 15 to Dec. 5	13	752	23,379	27,976	None	3
From Dec. 12 to Jan. 17	24	226	6,394	11,080	Morphia ¼	3
From Jan. 17 to Jan. 26	9	157	4,191	10,212	None	1

Autopsy, ten hours after death. Body very much emaciated. On opening the thorax, the two upper lobes of the right lung were found to be consolidated from tubercular infiltration, and a pneumonia which had passed into the second stage. On cutting into its substance, two or three recent cavities, filled with pus, varying in size from a pea to a small marble, were discovered. In other respects, these organs were healthy. The liver was of its natural size and appearance. The kidneys one-fourth larger than usual, rather flabby,

but not congested. All the other abdominal organs presented their natural appearance. The bladder contained about ℥vj of clear urine, but *no* sugar could be detected in it.

The blood from the hepatic vein, from the right and from the left side of the heart, was examined with a view of detecting sugar. In the first only was it at all perceptible. Thus: the blood was first dried, then boiling alcohol added, and filtered; this evaporated, and the residue dissolved in distilled water. To this Barreswil's liquor was added, and by boiling a slight canary tint was made evident.

Baltimore, *March* 3, 1853.

Art. XI.—*Mode of Reducing Dislocation of the Thumb.* By John Doe, M. D., of Cabot, Vermont.

Having had occasion to reduce a dislocation of the thumb several times, when the first phalanx is thrown upon the dorsum of the metacarpal bone, and having never encountered any particular difficulty in effecting it, it has been a cause of surprise to me that the method I am now to describe is not more generally known. There is not an English writer on Surgery, from Sir A. Cooper to Fergusson, nor an American one, so far as I know, that alludes to this method; and, if we are to judge from an article by M. Demarquay, published in the *Medical News*, of May, 1852, and accredited to the *Bulletin de Thérapeutique*, it might well be presumed that the French are also innocent of practising or teaching it.

The common method of reducing this luxation is, as is well known, to flex the thumb, fasten upon it a tape with a clove nitch, and with this make extension. If this, or more violent means do not succeed, we are directed either to abandon the attempt at reduction, or what is still worse, effect it by making incision, or by amputation of the end of the metacarpal bone. Extension has sometimes been persevered in to such a degree that the soft parts have been lacerated, or the thumb actually torn off; and in *Braithwaite's Retrospect*, part xxii., M. Blandin describes a forceps well calculated to do this.

In this dislocation, the phalangeal end of the metacarpus projects into the palmar surface of the hand, forcing itself between and through the flexor muscles of the thumb, which form a loop around the head of the bone. Extension made upon the thumb makes this loop more tense; and, as the metacarpal end of the first phalanx is broad and considerably flattened on its palmar aspect, it must be apparent at once that the difficulty of reduction is directly as the amount of extension. There is good reason to believe that extension would never succeed in these cases without rotation. The principal indication in treatment here, is to relax the flexors forming the loop, so that the

end of the phalanx can be pushed forward into the loop, and by carrying the muscles forward with it disengage the head of the metacarpus. This can be done in the following manner:—

Having previously warmed the hand, if cold, in warm water, the surgeon should seat himself by the patient, facing in the same direction, and upon the same side with the injured thumb, and place the hand upon his knee. Tip back the thumb upon the dorsum of the metacarpus to more than a right angle, or so as to form a slightly acute angle with the latter bone; place both index fingers against the ball of the thumb, and the ends of both thumbs against the dorsum of the disarticulated end of the phalanx; now by pushing forward forcibly, get steadily against the phalangeal bone with both thumbs. Reduction will generally be effected on the first trial, and almost instantly.

The writer claims not the honour of originating this method, but supposes it to be adopted by many surgeons in this country.

REVIEWS.

ART. XII.—*A Treatise on Tuberculosis, the Constitutional Origin of Consumption and Scrofula.* By HENRY ANCELL, *late Surgeon to the Western General Dispensary, etc. etc.* London, 1852: 8vo. pp. 779.

TUBERCULOSIS is regarded by Mr. Ancell as strictly a blood disease. He refers to a primary morbid condition of the blood all the local tubercular affections. He goes yet a step farther than most other pathologists, since he believes in the existence of tuberculosis as a disease of the blood, independently of any local deposit. He says in the preface:—

"Since the discovery of the stethoscope, we have habituated ourselves so much to depend upon the presence or absence of tubercles as the sure and only indications of the presence or absence of the constitutional disease, that we have nearly lost sight of the possibility of the existence of the one without the other; and yet, if we only watch tuberculous subjects closely, we may observe them for many months or even years, with the general symptoms of tuberculosis, without the slightest indication of local disease, but ultimately dying from tubercle rapidly developed in several organs at once; or we find young persons affected with scrofulous joints, who take to their beds without a sign of internal tuberculization, but soon exhibit all the symptoms of the general disease in its progressive form; until ultimately tubercle is developed in the lungs, the mesentery, or other organs."

Hence it may be seen that the subject is treated on an original plan; the prevailing idea is carried, also, systematically throughout the work; the symptoms, causes, treatment, &c., being all referred to, and made dependent upon the original blood disease. Mr. Ancell was already known as a zealous cultivator of pathological chemistry; he published, in the *Lancet*, a "Course of Lectures on the Physiology and Pathology of the Blood," and, subsequently, defended Liebig's doctrines in a series of commentaries, entitled, "*Liebig and his Reviewers.*" Practically familiar with the processes of medical chemistry, endowed with uncommon powers of generalization and analysis, and enriched by a long clinical experience, our author was certainly well fitted to carry into effect his long-cherished design of systematizing the pathology of tuberculous and scrofulous diseases. Of the identity of these, he expresses strongly his conviction; and, consequently, treats of them throughout under the same designation. He considers *scrofula* as merely a form of tubercular disease, but yet essentially the same as it, and due to the same morbid condition of the blood, whatever that may be. Upon examining into the sources from which are derived the results used by the author to characterize the actual condition of the blood in tuberculosis, we find that these are taken from the analyses of Andral and Gavarret, Nicholson, Glover, and Fricke. Now the blood, analyzed by these writers, was taken from persons with scrofulous diseases and with incipient and confirmed phthisis. It is in vain to conceal the fact that here may be important sources of error. If, for instance, we turn our attention to the scrofulous affections, we find so many important dissimilarities in form, seat, and general pathology from the strictly tubercular diseases, that we cannot avoid feeling much doubt of the propriety

of classing them with these latter. And, if we go further, and inquire concerning the anatomical characters of these two forms of disease, we discover that a certain number are really tubercular (*i. e.*, characterized by a deposit of tubercle), while many are not. Whatever resemblance there may be between the constitutional symptoms of two diseases, very certainly the only true basis for a nosological distinction is to be found in the anatomical lesions.

Mr. Ancell says (p. 624): "The local products of scrofula and of indisputable tubercular disease have the same anatomical elements. Both are subject to the same metamorphosis of softening and cretification." If we examine, however, the diseases which come under these designations, we find that they require to be divided into two classes, one of which comprises those in which no local deposit of tubercle takes place, and the other where it is supposed invariably to be present. The first class includes what may be properly termed *scrofulous* diseases, for want of a better name, and in the second are found, with the undoubted tubercular affections, a certain number more generally called scrofulous. It is of these latter that the question arises, are they tubercular or not? We allude to the diseases of the external lymphatic glands and of the bones and joints occurring in persons of a strumous habit. The only correct answer to this question is found in the anatomical changes of the parts affected.

In the external lymphatic glands there are three very distinct pathological conditions. In one, the substance of the gland is redder, firmer, and more developed than in health; and at a more advanced period its tissue assumes a granular aspect, and becomes of a tough, fleshy consistence. This is the form of scrofulous swelling most amenable to medical treatment, local or general; it may gradually disappear, and leave no trace of its existence. It contains no unorganized product incapable of resorption; and, strictly speaking, is nothing more than a chronic engorgement of the glandular structure. This enlarged gland may, however, become the seat of an albuminous exudation, constituting a second form of disease. This albuminous blastema infiltrated through the gland is of a pearly colour, and resembles the gray tubercular matter found in the lungs. We are disposed to believe that in itself it undergoes no transformation. It constitutes that form of swelling which remains stationary for an unlimited period, proving rebellious to all the best-directed medical treatment, and only ulcerating from the effect of external irritation and violence, or from the deposit in it of the real yellow tubercle.

This latter, when grafted on the preceding form, or developed independently, forms the third variety of scrofulous tumours of the neck. Its proper termination is, of course, in ulceration; the chalky transformation being extremely rare. Hence, manifestly, it is erroneous to consider ulcerated glands of the neck as offering the type of *scrofulous* disease, as has been done by Phillips and others. On the contrary, we would place them, like Lebert, among the tubercular affections, excluding only a certain number, the first variety which we have described.

This same distinction may profitably be made among the diseases of the bones and joints, with regard to which, the terms scrofulous and tubercular are employed as convertible by many persons. It is, indeed, true that our knowledge of the condition of bones and joints thus affected rests upon no very sure foundation; a very great difference of opinion prevailing respecting the most important point in their pathology—the initial step in the disease, *its* true nosological character and location. Yet, we think, enough is known to show that tubercle exists in bone mostly in an encysted form, and that it makes its way, in a very gradual manner, either to the periosteal surface, or,

if in the neighbourhood of a joint, into it; but, as for tubercular *infiltration* of bone, its existence rests upon very insufficient demonstration, and is more probably inferred from an assumed analogy between the tubercular processes in the lungs and that in the bones. The only clearly demonstrated form is that of the encysted tubercle; while even here, it must be remembered that a purulent *foyer* may receive a membranous investment in the same manner, and is very probably often erroneously looked upon as tubercular. Yet, admitting the occurrence of tubercle in bone, there yet remains the far more frequent disease of *caries;* this may commence in the periphery or in the interior of the bone. It has no similarity with tubercular disease either in its progress or results; the pus and the detritus resulting from the decay and elimination of dead tissue having their own peculiar character, but in no respect like the tubercular product. The inflammatory process in a scrofulous constitution acquires a peculiarity which is perhaps more easily understood than defined, but which manifests itself in all tissues alike. The essentiality of scrofula and its peculiar physiognomy can be affirmed without our being able to show that it possesses any such constant product as have tubercular or cancerous disease. It bears with it always the same features, which can be recognized, whether it be in the organs of sense, the articulations, the skin, glands, or bones.[1] It may not be inappropriate to direct attention here to a fact fully established by cases reported by Lebert, in his classical work upon scrofulous and tuberculous diseases. We refer to the apparent inversion of the usual relation between the deposit of tubercle in the lung and the other parts of the body. The opinion of Dr. Louis, founded upon ample observation, and since fully corroborated by other writers is, that where, after the age of 15 years, tubercle is found in other parts of the system, we may look for it with confidence in the lungs. Yet Dr. Lebert reports cases in which the most extensive disease and disorganization of the vertebral column and other portions of the bony frame were found, while the lungs contained not a single tubercle, or but a most insignificant trace of it. Were we to admit these as instances of tubercular degeneration of bone, how glaring an exception would they form to the well-known relations of the disease. While it is desirable never to lose sight of the axiom that the proof of the presence or absence of the tubercular (or any other specific) product ought of right to rest upon physical demonstration by the microscope or by chemical analysis, yet neither of these appliances are, we venture to assert, in this matter more to be trusted than the unassisted senses. The extreme difficulty of discovering a few tubercular cells or of detecting by any chemical test the presence of tubercle in a mass of carious suppuration, containing the *débris* of bony, muscular, and ligamentous tissue, obliges us to have recourse to these methods of reasoning. Those who contend for the great frequency of tubercle in scrofulous diseases of the bones and joints, should rest their demonstration on less vacillating ground than these microscopic elements, about the worth of which no two pathologists can be found to agree. There is hardly a point in microscopic anatomy more debated than this one, and the opinions for or against the existence of characteristic tubercular cells are equally decided. Consider-

[1] Dr. Pepper has lately described (*Am. Journ. of Med. Sci.* April, 1852) a "scrofulous induration of the lung" itself, as distinct from the induration from tubercular deposit. His observations give additional force to the distinction we desire to make between the two diseases. If, indeed, the right of scrofula to share the sway, before almost undisputed, of pulmonary tubercle be fully established, we shall have much reason to be more sanguine of the results of medication. We may add that Dr. P.'s cases prove equally the *association* of the two diseases, and their independent character.

ing this question still unsettled, we believe that there is yet sufficient evidence, from the relations and laws of association of the two diseases, to establish the absence of identity between them. This view is maintained by Lebert, who is at the same time the most distinguished opponent of the doctrine of identity and the most zealous advocate of the possibility of recognizing microscopic tubercular elements.

We have designed merely to draw attention to the anatomical considerations which require that a distinction should be drawn between tubercle and scrofula. Much more might be brought to confirm this result from general pathological reflections, but our limits will not allow us to enter upon this discussion. Enough probably has been said to show that, in order to ascertain the condition of the blood in *tuberculosis*, whether latent or developed, it is not logical to make use of cases of *scrofula*, very palpable distinctions existing between the two. At the same time, we have no reluctance to assent to the result arrived at by Mr. Ancell, viz., that these diseases are characterized by a "defective vitality" in the blood. This is a point that hardly required demonstration, being so obvious that, with perhaps the exception of some devoted followers of Broussaism, it must command universal assent. The objections we have made are, therefore, not directed at the conclusion Mr. Ancell arrives at, but against the methods which he employs.

Mr. Ancell maintains that the blood is tuberculous before the development of local disease. He admits (p. 582) that "there is at present no known sign of diagnostic value by which tuberculous blood can be distinguished from that which is non-tuberculous;" but nevertheless considers that,

"In many cases, with a knowledge of the antecedent and present history of the patient, and a correct estimate of the causes of the disease, the diagnosis may be made, if not with certainty, still, with a high degree of probability; in other cases, with all this knowledge at our command, it is a problem of the greatest difficulty. It involves the determination, at any period of life, of the existence or non-existence of a tuberculous condition of the blood—of that quality which produces the mal-nutrition of the tissues, so fully described (p. 20), and which keeps the individual in continual risk of the exudation into the intimate structure of the vital organs of an imperfectly organized blastema."

Again (p. 112):—

"It occasionally happens that tuberculosis proceeds, in the adult, to the last stage of marasmus and a fatal issue without hæmoptysis, the aggregation of tubercle, or any obvious local affection. It frequently happens, also, that some local affection, as tubercles in the lungs, supervenes, but of so circumscribed an extent that it interferes little with the functions of the organ or the general symptoms of tuberculosis, or of the tuberculous predisposition, and, from hygienic or other causes the general affection subsides, and nature renders inert the local mischief by a cretaceous formation or a fibrinous deposit."

These extracts show pretty clearly the author's prevailing idea, that tuberculosis is a disease of the blood, and tubercle its local manifestation. Hence, he desires to anticipate the occurrence of local disease by arresting it in its primary phase in the tuberculous predisposition. But here we are met by the difficulty of accurately knowing where the tendency ends and the disease begins. The author admits that there is no clear line of demarcation, and says, also, that the predisposition does not necessarily pass into disease:—

"Many, having been deemed consumptive throughout life, from having exhibited this constitution in a well-marked form, have nevertheless attained longevity, and died from some other malady." P. 59.

We find the *diagnosis* of the tuberculous predisposition and of tuberculosis

(a more advanced stage of the predisposition, but still anterior to the deposit), described in the first two chapters. The description of the former corresponds with the ordinary portrait of the scrofulous constitution. The signs and symptoms of tuberculosis are distributed under the following heads (p. 64):—

"(1.) Anemia.

"(2.) Atrophy; *a*, attenuation of the mucous membranes; *b*, attenuation of bloodvessels and hemorrhage.

"(3.) Direct debility; *a*, of the secretory functions; *b*, of the digestive; *c*, of the circulation and the involuntary muscular functions; *d*, of the respiratory functions; *e*, of the function of voluntary motion; *f*, of the nervous functions; *g*, of the generative functions.

"(4.) Diminution of the power of sustaining the animal temperature.

"(5.) Febricula."

It will readily be seen that this list is open to objection, on the ground that the presence of tubercles being not always ascertainable by our means of examination, even in cases where they may exist, in some organs, in great abundance, there is an impossibility of determining the share which the local deposit may take in producing the phenomena above enumerated. As a general description, however, of the symptoms attending the development of tubercular disease, the five sections of this chapter are very interesting, containing a great deal of information, evidently the result of close inquiry and observation.

In the third chapter, the *tuberculous deposits* are described. Mr. Ancell agrees with Lebert and Dr. H. Bennett, in regard to the existence of characteristic tubercle corpuscles. The detailed history of tubercle is given under the heads, of its seat, origin, physical and chemical characters, and transformations. All of these subjects are treated of at length, and ably handled. Mr. Ancell does not consider the gray granulation as a phase in its development, through which the tubercle must necessarily pass. He speaks of one form of gray granulation as a "product of chronic pneumonia independent of tuberculosis," and at the same time of a gray tubercular infiltration as distinct from this. If we understand the language rightly, the author's opinion is that there are two forms of the gray tubercle, the one occurring independently of inflammation, the other in an infiltrated state, the product of chronic inflammation in tuberculous subjects, which becomes the nidus for the deposit of the yellow or crude tubercle. It will be seen that the author differs, on this point, both from those pathologists who consider the granulation as *sui generis* and incapable of transformation, and from those who, following the example of Laennec, consider the gray miliary tubercle as the common parent of all varieties of the tuberculous deposit.

Mr. Ancell, in the next chapter, gives a comprehensive account of the special pathological anatomy of tuberculosis. The words scrofulous and tuberculous are made convertible throughout, so that many diseases which to us appear to have no tubercular character whatever, as various cutaneous eruptions, subcutaneous abscesses, &c., are ranked with the true tubercular diseases. But, overlooking this circumstance, we find, in this portion of the work, a very complete account of the condition of all the organs or structures affected by tubercle, embracing the results of the most recent observations. Before taking leave of this portion of the subject, we must give, as an illustration of the facility with which so eminent a pathologist as the author can be deceived by fanciful analogies, the following extract, quoted by Mr. Ancell as an instance of "universal tuberculosis of the bones:"—

"The exostoses are in some places two inches long; the majority of the tubercles, when cut into in a fresh state, exhibited the usual 'gray semi-trans-

parency,' and the internal viscera were not affected. The bones of the head alone were free; the spinal column and sternum were dotted all over with tubercles, the ribs on the right side especially; the second, third, and sixth presented large elevated tubercles. In the tenth rib there was a large excavation; and in fact all the ribs were tuberculous, as also the *os innominatum*, and the whole lower extremity. Numerous other cases are described."[1]

We pass over the very elaborate pages devoted to the *causes* of tuberculosis, and come to the author's views upon the *treatment* of tubercular disease, or rather of tuberculosis. He discusses very fully the rules to be put in force against it. His aim is "to cure the tuberculosis, and thereby prevent the deposition of tubercles, or to render them innocuous when deposited." The first object he desires to accomplish by discouraging the intermarriage of tuberculous persons, whether they be blood connections or not. Moreover, Mr. A. thinks that it may be adopted as a principle, that advantage results from the *crossing of temperaments*, when a constitutional affection appears to have its origin or essence intimately associated with any particular temperament. With the same view, he would also discourage precocious or too late marriages, marriages where there is a great disparity of age, and the union of paralytic, epileptic, lunatic, and other subjects of uncured or incurable nervous diseases. He would also prohibit cohabitation under the influence of the causes of the disease, and during early convalescence after acute affections, and "endeavours to insure the perfect cure of any blood disease which is likely to lay the foundation either of debilitated or tuberculous children." He thinks it of importance, also, to consider the period of conception in reference to the actual state of the blood, as "the vigour or feebleness of the offspring depend upon the actual state of health or disease of the father or mother at the period of conception." While our knowledge upon matters like these, which are mostly out of the reach of medical interference, must always remain to a great extent vague and conjectural, there still can be no doubt of the importance of a closer attention to them. Mr. A. admits the great practical difficulty of enforcing these excellent precepts. No doubt, if we could control the propagation of the human race, as we can that of the domestic animals, insuring by judicious crossing the best examples of vigour and beauty, the general well-being would be vastly enhanced; but it is unfortunately too plain that the influence of physicians is, in these matters, most insignificant. Worldly interest, ungoverned affections, and indifference to the future, warp the judgment and shape the conduct of the majority of mankind. Physicians are busy in repairing the evils which vice and heedlessness are daily creating anew; their assistance is not often invoked to check the polluted tributary currents of disease, but only to stay the ravages of the already swollen tide. It will always be so; and however sincerely we may unite with Mr. Ancell in his philanthropic desires, it appears to us that the task he proposes is beyond the powers of any physician to accomplish.

We discover nothing particularly worthy of notice in the author's observations upon the *treatment* of tuberculosis. His remarks and precepts, while both lucid and judicious, possess no intrinsic originality. He has collated, also, from the best authors, much valuable information concerning appropriate hygiene and treatment. The results of his industry will no doubt be widely used and appreciated, especially the tabular statements made out by himself, as well as compiled from other authors. Among these are included valuable tables, showing the mortality from tuberculosis (or from tubercular and scrofulous diseases), in various localities.

[1] "Pathologica Indica," by Allen Webb, 1848, p. 127.

The ever-present and characteristic feature of this interesting and voluminous treatise is, that tuberculosis is a disease of the blood primarily and ever. Were we asked how this fact is ascertained, we should be able only to answer, that the author does not claim to have discovered anything very peculiar in the condition of the blood beyond a probable diminution of its fibrine and red corpuscles; that this conclusion is obtained by analysis of scrofulous blood, as well as of blood from persons with confirmed phthisis, and is therefore open to objection, since the differences between these two forms of disease have been shown to be important. We believe that the actual condition of the blood in tuberculosis (*i. e.* before tubercle is deposited) is extremely difficult to ascertain; since tuberculosis, as the author understands it, is rather a problematical affair. Positive and reliable results can only be obtained by microchemical analysis, after the most careful exclusion of every malady not positively tuberculous. Till this is done, we may pin our faith to any plausible theory of the constitutional origin of the disease, with the sad conviction that we can expect but little from such sources in combating the worst of "all the ills that flesh is heir to." M. S.

Art. XIII.—*On Rheumatism, Rheumatic Gout, and Sciatica; their Pathology, Symptoms, and Treatment.* By Henry William Fuller, M. D., Cantab., Fellow of the College of Physicians, London; Assistant Physician to St. George's Hospital, &c. &c. London, 1852: 8vo. pp. 403.

There are few diseases of such frequent occurrence as rheumatism, and of equal importance—whether viewed in reference to the amount of suffering it gives rise to, or the serious and often fatal results by which it is not unfrequently followed—in relation to the true pathology and treatment of which there exists greater uncertainty. This has, no doubt, arisen from the fact that the term rheumatism has been applied to a variety of affections, all marked alike by intense and obstinate muscular or articular pains, but differing essentially from each other in their character, origin, progress, and results, and each demanding for its cure a distinct course of treatment.

That the disease to which the term rheumatism is most generally applied, and to which it would be well invariably to restrict it, is dependent on a vitiated condition of the blood, we think there can be little doubt. Many of its leading and most characteristic phenomena are characteristic of an affection produced by a morbific cause existing in the circulating fluid.

"Its attacks are ushered in by premonitory fever; its local symptoms are erratic, and yet remarkably symmetrical in their arrangement; the heart, the lungs, and other internal organs are affected, and when metastasis occurs, the constitutional symptoms are such as are met with, under similar circumstances, in diseases known to be connected with a vitiated blood."

There is, in fact, a strong analogy between gout and rheumatism.

"So curiously do these two disorders coincide, so imperceptible in certain cases is the transition from the one to the other, that there is no little difficulty in distinguishing between them. In both, an hereditary taint may frequently be traced; in both, the fever is out of all proportion to the extent and severity of the local mischief; in both, the joints are the parts principally affected, and the inflammation, which is of a peculiar nature, observes a remarkable sym-

metry in its attacks; in both, internal organs are often implicated; and in both, anomalous symptoms of a similar character occur whenever metastasis takes place. And not only so; their affinity becomes even more apparent when their history is more closely and accurately examined. For it is then found, that whilst children of gouty parents are peculiarly subject to attacks of rheumatism, the offspring of a rheumatic stock no less frequently show symptoms of that hybrid disorder, rheumatic gout, and, in some instances, of unequivocal gout."

The quoted sentences, given above, are from the introductory chapter of Dr. Fuller's *Treatise*. To the general correctness of the statements set forth in them, as well as of the following summary of the views of that gentleman in relation to the pathology of rheumatism—employing the term in the restricted sense, already referred to—we subscribe.

"Cold and other external agencies are only predisposing and exciting causes of rheumatism, and the primary, proximate, or essential cause of the disease, is the presence of a morbid matter in the blood, generated in the system as the product of a peculiar form of mal-assimilation, of vicious metamorphic action. This poison it is which excites the fever, and produces all the pains and local inflammations which are often found associated in an attack of rheumatism. If the rheumatic virus be present in small quantity only, it may cause little more than wandering pains in the limbs, and may scarcely induce any perceptible fever, whilst, if it exist in larger quantities, it scarcely fails to cause febrile disturbance, and to excite inflammation in various parts of the body. In that respect, however, its effects are found to vary in different cases. Sometimes, though it cause great febrile excitement, its local agency may be confined to the production of external, articular inflammation; at others, it may fail to produce arthritis, but may give rise to acute inflammation of the heart; and at others, again, carditis may be one only out of several internal inflammations, which it sets up coincidently with extensive articular mischief. Moreover, there appear good grounds for believing that as in some cases it gives rise to excessive febrile disturbance for days prior to the accession of articular inflammation, and repeatedly without exciting inflammation of the heart, so in certain instances it may excite the peculiar train of symptoms whereby rheumatic *fever* is characterized, without producing, from first to last, the slightest concurrent local inflammation, whether of the joints, or of the heart, or any other organ."

But, while we admit that Dr. Fuller has with tolerable accuracy sketched the leading outline of the true pathology of rheumatism, we must, nevertheless, insist that articular and muscular pains—often of a severe and protracted character, and simulating very closely those of rheumatism, are not unfrequently the immediate result of exposure to cold and moisture. Upon a careful examination of the cases in which these pains occur—the concomitant symptoms and ordinary course—the diagnosis between them and cases of genuine rheumatism is readily settled; still their occurrence, which we think cannot be denied, disproves the assertion made by Dr. Fuller, that "the phenomena produced by cold are totally unlike the symptoms of rheumatism." He admits, it is true, that cold and moisture combined may prove an active predisposing cause of this in common with many other disorders, or an exciting cause when a predisposition already exists. We have repeatedly observed the pseudo-rheumatic pains alluded to in those who neither before, nor subsequently, exhibited the slightest predisposition to rheumatic disease.

The *Treatise* of Dr. Fuller commences with an inquiry into the rheumatic diathesis, and the causes which influence its development. The hereditary character of the disease is first considered.

The hereditary disposition of rheumatism, though often overlooked or disregarded, does not admit, we think, of reasonable doubt.

"Circumstances," says Dr. F., "not unfrequently concur to render our efforts, to trace its hereditary character difficult, and often to make them unavailing, yet we cannot but feel surprised at the large number of cases in which its existence can be clearly ascertained. The records of the Consumption Hospital exhibit the operation of an inherited predisposition in little more than 24 per cent. of the cases there admitted; and the annals of insanity supply data to prove that its influence obtains in less than 13 per cent. among the inmates of lunatic asylums; whereas, among the rheumatic patients admitted into St. George's Hospital, I have traced it in nearly 29 per cent.; and M. Chomel distinctly ascertained it in half the cases admitted into the Hôtel Dieu. Nor is this the only evidence which can be offered in its favour. M. Roche has expressed his firm belief in its hereditary tendency; and Dr. Macleod, and other physicians of eminence in this country, have arrived at the same conclusion. Moreover, this hereditary tendency exists almost invariably in the cases which are earliest and most fully developed."

Dr. Fuller sets down the period of life during which rheumatism generally occurs as that between fifteen and fifty—few cases occurring either earlier or later in life. Reference is here had to the acute form of the disease. We have, however, observed well-marked attacks of rheumatism to occur quite frequently in young children; so frequently, indeed, during childhood, as to lead us to the belief that it is a more common disease in early life than is generally supposed. Dr. Fuller reports sixteen cases as occurring in patients between five and fifteen years of age. In one instance only was the patient under the age of ten. He has had, however, under his care at the hospital, a child only eight years old, suffering from dropsy and diseased heart, the result of two attacks of rheumatism, one of which occurred at the age of two years and nine months, and the other at the age of six years and four months. Dr. Heberden reports that "rheumatism had appeared as early as in a child of four years old." Dr. Watson states in his Lectures that he has "frequently seen it in children, sometimes as early as the third or fourth year;" and Dr. Davis states (*Med.-Chirurg. Rev.* October, 1817), "several cases of acute rheumatism were admitted in children of three, four, five, six, and seven years, and upwards." In its chronic form, rheumatism may probably be ranked as among the most common maladies of the decline of life.

Dr. Fuller denies that the occurrence of an acute attack of the disease tends to strengthen the disposition to rheumatism. If such were the case, he remarks, the victim of a well-developed attack of the disease would inevitably be a martyr to rheumatism for the remainder of his life; whereas the occurrence of a single acute attack is by no means uncommon when exciting causes are subsequently avoided, and the general health is carefully attended to.

There is much truth in the following remarks:—

"When once a paroxysm has been fully established, there is too much reason, however, to dread its recurrence at some future period; for it is a certain sign of a tendency to the formation of the rheumatic poison, of the proneness of the system to suffer from its influence, and of its power to set up those actions which constitute a paroxysm of acute rheumatism. Moreover, in ordinary cases, but little care is taken, after recovery from such an attack, to guard against a similar invasion in future. The disease is looked upon as the effect of cold; and, therefore, to use the common phraseology, 'when it is fairly cured,' no treatment is subsequently adopted; no means are taken to improve the general health; the patient having for the time got rid of the *materies morbi*, feels as well, or even better, than he had done for weeks or months previously, and ignorant of the real cause of the disease, is unwilling, even should his medical attendant recommend it, to subject himself to further treatment. Yet this is just the time when medical interference is most effective in correcting that un-

healthy state of assimilation on which the existence of rheumatism depends, and which, if not immediately arrested, will probably pass from bad to worse, until it issues again in a paroxysm of the disease."

In regard to the seat of rheumatism, the particular textures of the body in which the disease is seated, on which so much difference of opinion has existed among pathologists, and, to some extent, still exists, Dr. Fuller remarks that, although

"The joints and the surrounding structures are the parts most commonly implicated; still, not unfrequently the pericardium and endocardium, the investing and lining membranes of the heart, become the seat of rheumatic inflammation, and, in some rare cases, the heart itself does not escape entirely unscathed. The uterus, the kidneys, and more rarely the liver, sometimes experience the effect of its irritation, and the lungs are not unfrequently affected, as is evidenced by the supervention of bronchitis and pneumonia. In some cases, active pleurisy supervenes, and more rarely inflammation of the sac of the peritoneum. The eyes occasionally suffer, as do also the testes, and the skin, and the periosteum in various parts of the body. Dr. Watson has reported rheumatism of the articulation of the jaw; Dr. Copland and others, of rheumatic inflammation of the membranes of the spinal cord, and instances of inflammatory affection of the dura mater are to be found in every work on rheumatism. And other parts are secondarily, even if they be not primarily implicated, for the cartilages of the joints may inflame and ulcerate, and even the osseous structures may eventually become involved in the mischief. That such complications would occasionally arise, might have been expected, *à priori*, from the general distribution of the cause of irritation, and the severity of the local symptoms induced; and, although many of these complications are happily of rare occurrence, and are seldom, if ever, met with in otherwise strong and healthy subjects, yet to deny their existence is to disregard facts which are fully confirmed by experience. But not only does the rheumatic virus obey the general law of poisons, in that its action is not limited to any one texture or organ of the body, it further resembles this class of agents in displaying a partiality for a particular texture, and particular organs, upon which it fixes in preference to others. Such a texture is the white fibrous tissue, which enters into the formation of the aponeurotic sheaths, the fasciæ, the capsules of the joints, the ligaments and tendons, and the fibro-serous membranes in various parts of the body. The parts, therefore, most commonly affected, are the joints and their surrounding structures, the valvular apparatus of the heart, and the fibro-serous coverings of the heart, the strong white glistening sac of the pericardium.

"The reason of this predilection of the rheumatic poison for the fibrous and fibro-serous textures throughout the body is not at first sight obvious, nor, indeed, after the most careful consideration, can we assign to it other than a conjectural cause. But it is worthy of note that the textures most commonly implicated in rheumatism are all examples of the albuminous and gelatinous tissues, from the decomposition of which, in the wear and tear of the body, are formed those secondary organic compounds, the lithic and lactic acids, with which gout and rheumatism are intimately connected. And as it is but consistent with our knowledge respecting the processes of nutrition and assimilation to suppose that each tissue selects from the blood, and appropriates to itself such matters as correspond with it in chemical constitution, we may readily conceive that some peculiar attraction may be exerted by the fibrous and fibro-serous textures for compounds, such as the lithic and lactic acids, to which they bear so strong an affinity."

The fact that the joints which are most exposed, as the knees, feet, ankles, wrists and hands, the elbows, shoulders, and hips, are the parts most commonly implicated in the attack of rheumatism, that such articulations as have been the seat of local injury, as a sprain, etc., and that parts which are habitually and violently exercised, are those in which the earliest symptoms

of the disease usually appear, Dr. Fuller explains as follows, and perhaps correctly:—

"In all these cases the nutrition of the parts affected is unusually exalted, their power of attracting and separating from the blood such matters as correspond with them in chemical constitution is proportionably increased, and hence the reason of their being affected prior and in preference to other parts of the body."

Dr. Fuller divides rheumatism into: 1st, acute rheumatism, or rheumatic fever; 2d, rheumatic gout; 3d, chronic rheumatism; and 4th, neuralgic rheumatism.

In the fourth chapter, we have a very accurate description of the first variety—acute rheumatism, or rheumatic fever.

In regard to the ordinary duration of this form of the disease, which Dr. Warren makes six weeks, Scudamore, in mild and favourable cases, three weeks or even less—but when the course of the disease is untoward, two months; Chomel, four weeks—convalescence never taking place before the twentieth day; and Dr. Macleod, from five to six weeks; Dr. Fowler has been led to believe, from the result of his own observations, to be, under ordinary methods of treatment, even when the disease is unattended by any internal affection, from four to five weeks. Of 246 cases admitted into St. George's Hospital during the period he held the office of Medical Registrar, the great majority were decidedly convalescent about the end of the fourth or the beginning of the fifth week from the commencement of the attack, and were ready to leave the hospital about the end of the sixth week. Of 23 other cases noted by him at the Hôtel Dieu at Paris, and part at Addenbrooke's Hospital at Cambridge, considerably above one-half were of about the same duration. Dr. F., however, remarks:—

"Experience has taught me to believe that remedial agents are capable of still further shortening its duration; and to such an extent does this hold good that I hope to show the average duration of an uncomplicated attack may be reduced by judicious treatment from a month or five weeks to ten days or a fortnight."

This treatment is detailed in the ensuing chapter. After a general consideration of the value of different remedies, bleeding, purging, opium, vapour and hot-air baths, mercury, tartar emetic, cinchona, colchicum, guaiacum, nitrate of potash, lemon juice, alkalies and their salts, Dr. Fuller remarks, that his chief objection to many of the expedients which have been resorted to for the cure of acute rheumatism lies not so much against the remedies themselves, as against the mode in which they have been employed.

"Each remedy or class of remedies has been too exclusively relied upon. There may be occasions in which bloodletting, or opium, or calomel and active purging are necessary; there may be circumstances which call for the exhibition of guaiacum, of nitre, of colchicum, or other agents; but it seldom if ever happens that the cure of acute rheumatism can be safely intrusted to any single remedy. For as the disease presents different aspects in different cases, so does it also at different stages in the same individual; and even were it not so, the constitutional disturbance is so great, the cause of the derangement is so widely spread, and its effects extend to such a variety of organs, that every principle of medicine points to a compound method of treatment as most likely to lead to a successful issue."

Venesection, Dr. F. does not consider necessary for the relief of the pain or the tranquillization of the pulse, while in pale and weakly subjects, he believes it is injurious by rendering more irritable the already irritable and

excited heart. In the young, plethoric, and robust, in whom secretion is insufficient, whose pulse is full and bounding, and whose skin is hot and dry, he is convinced that it does assist in expediting the action of other remedies, and so in promoting recovery. To such cases he would restrict the employment of bloodletting—and restrict it to a single operation of from eight to ten ounces.

Under the circumstances referred to, we believe that venesection is imperiously demanded; and the abstraction of double the quantity of blood indicated will often be followed by immediate relief, and tend to shorten considerably the duration of the disease.

When the bowels are acting once a day, Dr. F. considers purgatives to be seldom necessary, though a dose of calomel and opium may be given with the view of modifying the character of their secretions. When, however, the bowels are sluggish, and the discharges dark coloured and offensive, he advises the calomel and opium to be administered at once, and followed, after the lapse of six or eight hours, by infusion of senna, with half an ounce of the potassio-tartrate of soda and twenty minims of the wine of colchicum. The amount of opium to be so adjusted to the dose of the purgative as to procure one full and copious evacuation without the distress attendant upon purging. If the tongue be rather dry, the bowels continue sluggish, and the dejections dark-coloured and offensive, Dr. F. directs the mercurial and purgative to be repeated for several successive days; when, however, the secretions from the bowels are copious, but unhealthy in character, he directs the calomel and opium to be given at night, without being followed by a purgative in the morning.

Whilst the state of the intestinal secretions are thus attended to, Dr. F. administers the alkalies or the neutral salts in combination with colchicum, full doses of opium, and sometimes a little antimony. His experience has taught him that by the alkalies, given in sufficiently large doses and in combination with other remedies, the most agonizing pain is speedily relieved, and the fever subdued with marvellous rapidity—the patients becoming rapidly convalescent:—

"In twenty-three out of thirty-nine cases in my note-book," he remarks, "the pulse was tranquillized within forty-eight hours from the commencement of treatment, and in twenty-eight the pain was lulled, and the local inflammation greatly subdued within the same time, whilst in the remaining cases a longer period was required, in consequence either of previous constipation, or of the coexistence of some internal complication.

"The form in which I usually administer the remedies is that of a simple saline or a nitre draught, to which, if the patient be a person of average strength and robustness, bathed in profuse perspiration, with red, swollen, and exquisitely painful joints, a furred tongue, loaded urine, and a full and bounding pulse, I usually add from two to three drachms of the potassio-tartrate of soda, ten or fifteen minims of the vinum colchici, from fifteen to twenty minims of the vinum antimonii, and from ten to fifteen minims of the tinctura opii, or of Battley's sedative solution to prevent the salt running off by the bowels. This draught is repeated for the first twelve or twenty-four hours at intervals of three or four hours, according to the strength of the patient and the severity of the attack; and if the pain is excessive, I prescribe a pill containing from half a grain to a grain or a grain and a half of opium, or an equivalent dose of Dover's powder to be taken once or twice a day, taking care to increase or diminish the quantity of the sedative according to the circumstances of the case; on the one hand, avoiding constipation and narcotism, and on the other, guarding against diarrhœa.

"Sometimes, though rarely, the stomach does not easily tolerate these large doses of the neutral salts, and in such cases, the greatest benefit is derived from

the addition of a little lemon-juice and an alkaline carbonate, forming a saline effervescing draught. With this variation, an instance rarely occurs in which the medicine deranges the stomach, or produces the slightest disagreeable effects.

"When once the medicine has begun to take effect, which is evidenced by the gradual decrease of the pain, the tranquillization of the pulse, and the increase in the quantity and specific gravity of the urine, it is repeated every fourth hour only, and then every fifth or sixth hour; and usually at the expiration of two or three days I find its work in great measure accomplished; the saliva by that time has lost its acidity, the pains and inflammation have subsided, the pulse has fallen probably from 120 to 85 or 90 beats in a minute, the tongue has become moister and less red and furred, the urine more abundant, less loaded with the lithates, and of a higher specific gravity, and the perspiration less acid, less sour-smelling, and less profuse. In proportion as these symptoms of amendment manifest themselves, so is the dose of the alkalies decreased, until after the lapse of three or four days I usually feel justified in commencing the administration of quinia during the day, taking care to maintain a free action of the bowels by exhibiting now and then at bedtime two or three grains of the acetous extract of colchicum together with aloes or rhubarb, and, if necessary, a grain of calomel or blue pill. Should there be the slightest return of pain, the least increase of coating on the tongue, or, indeed, any evidence of returning fever, the use of quinia is at once abandoned, and alkalies are again resorted to. But generally the case proceeds steadily to convalescence, and after a few days the pills are either omitted altogether or repeated less frequently and in diminished quantities. Sometimes, if there be not much tendency to perspiration, the mistura guaiaci of the pharmacopœia may be administered, with the addition of a drachm of the volatile tincture of guaiacum and twenty or thirty minims of liquor potassæ, whilst, if the patient appears to be cachectic, the decoction of cinchona with the addition of the ammoniated tincture of guaiacum, or of half a drachm of the extract of sarsaparilla, with two or three grains of iodide of potassium and twenty minims of liquor potassæ proves a more active and efficient agent."

In regard to local remedies, Dr. Fuller restricts the application of leeches to those cases in which inflammation lingers about a particular joint, or in which the intensity of the action is so great as to threaten the integrity of the structures.

Warm fomentations may be, he judges, employed advantageously. They soothe the parts, promote perspiration, and thereby, he thinks, favour the elimination of the poison. Dr. F. has tried hot water, a warm solution of nitrate of potash, a simple alkaline solution, and finally a mixed alkaline and opiate solution, and has found the latter far the most powerful in allaying the pain of rheumatic inflammation. In every instance it has produced almost immediate relief, and the pain and inflammation have subsided rapidly. The solution usually employed by Dr. F. is potassæ carb. ℥j; liq. opii sedativi ℥vj; aquæ rosæ ℥ix; sometimes, however, the decoction of poppies is substituted for the liq. opii and rose water. It is applied by soaking thin flannel in the solution, and applying this to the inflamed parts, and then enveloping the whole in gutta percha.

Upon the subject of diet, Dr. F. makes the following judicious remarks:—

"The patient must be kept low; yet as there is an excessive drain upon the system, it is expedient to allow him more nourishment than would be safe or proper in other inflammatory complains. Strong beef tea and jelly may be given in moderate quantity; and with the view of supplying the waste caused by the perspiration, and of promoting the dilution, and more rapid absorption of the alkaline medicines administered internally, diluents, such as whey, thin gruel, or barley-water should be taken from time to time."

To illustrate more fully his mode of treating acute rheumatism, the author

presents the detail of six cases and an analysis of thirty-nine cases treated by him according to the plan above indicated. The results are highly favourable, and strongly press the plan upon the attention of physicians. How far it will be found adapted to the control of the disease in the intensely inflammatory character under which it often occurs in this country, experience alone can determine.

Chapter VI. treats of the causes of rheumatic affection of the heart. The frequency of rheumatic inflammation of the heart, Dr. F. attributes to the similarity in structure between the joints and the investing and lining membranes of the heart, the rheumatic poison having a special affinity for the fibrous and fibro-serous textures throughout the body, and fixing more particularly upon those which are in any way subject to irritation. The occurrence of carditis in any particular instance, he supposes, is determined, in great measure, by the irritability of the heart, from whatever cause arising; but, he remarks, according to the intensity of the febrile disturbance, so, *cæteris paribus*, is the liability to inflammation, whether of the joints, the heart, or any other part of the body, inasmuch as the violence of the febrile symptoms forms a tolerably accurate measure of the amount of the poison present in the system, and of the patient's susceptibility to its influence. He refers, also, to the number and intensity of the articular inflammations, and the proneness they exhibit to shift their quarters, as guides to the probability of heart or other internal affections, as it indicates not only the presence of a large amount of morbific matter, and a peculiar suseeptibility to its irritation, but, also, that it has no special tendency to become fixed to any particular spot, and may, therefore, seize upon the heart, or some other internal organ for which it has more or less affinity. Lastly, he supposes the extreme liability to cardiac inflammation, engendered by the repression or rapid subsidence of the articular inflammation, to be explicable by the greater quantity of the poison which is thus thrown into the blood's current.

Fibrinous deposition on the valves of the heart, Dr. F. considers to be due to the presence of an unusual quantity of fibrine in the blood, and to the weak state of solution in which it is held, probably in consequence of the extreme acidity of the system. He believes it to be essentially independent of valvular inflammation, and may or may not occur coincidently with it: the probability of its occurrence, however, he considers to be greatly increased by the existence of active valvular inflammation, inasmuch as the slightest roughness or unevenness on a valve, such as would be likely to arise from inflammation, would form a nucleus for the deposit of fibrine, and would thereby favour the tendency to its deposition. Its occurrence, he thinks, must be rendered probable, by the existence of active articular inflammation, on account, not only of the vast augmentation in the quantity of fibrine which is thereby effected, but of the extreme acidity of the system which such a condition implies, and of the weak state of solution in which the fibrine must consequently be held. Dr. F. supposes the deposit to take place on the valves in preference to other parts of the heart, partly in consequence of the extreme susceptibility to the irritation of the rheumatic poison exhibited by the fibrous tissue which enters into their composition—partly in consequence of the excited state in which they are kept by their unusually frequent and forcible contact with each other, and by the passage over them, and impulse against them of blood which has become abnormally irritating in its character, and partly, also, in consequence of the strong tendency which exists to the deposition of fibrine on anything projecting into the arterial current. A further consideration of the circumstances under which these accretions take place, serves, also, Dr. F. supposes, to explain

why the angular projections and the edges of contact of the valves are frequently loaded with fibrinous deposits, whilst the surface and free edges of the valves, and other parts of the endocardial membrane, retain their healthy unincumbered condition. For nothing, he remarks, can be more certain, than that fibrinous deposition may be determined to a spot by any cause calculated to roughen or irritate the endocardial membrane; and the angular projections and the edges of contact of the valves, are just the parts which are most subjected to tension, attrition, and pressure.

The foregoing is a very brief outline of the author's views in reference to the important pathological questions embraced in the sixth chapter. The entire chapter is deserving of an attentive perusal. His remarks on the fibrinous vegetations of the valves of the heart are particularly interesting. The evidence he has adduced to show that they are not always the result of endocardiac inflammation has much weight, though occasionally his inferences appear to us purely hypothetical.

The seventh chapter presents an excellent history of the organic changes to which rheumatic carditis gives rise, followed by an exposition of its physical signs and general symptoms. We present the summary with which the chapter closes.

"In summing up the principal facts deserving of notice in reference to rheumatic inflammation of the heart, I should," remarks Dr. F., "say that it is incidental to all the stages of acute rheumatism, occurring sometimes before the commencement of inflammation of the joints, and possibly, also, in some rare instances, without the occurrence, from first to last, of any active articular symptoms; it arises less frequently towards the close of the disease, when tending to a favourable termination, than it does at its beginning or during its progress. It supervenes, most frequently, in acute attacks of the disease, more especially when inflammation attacks many joints, and manifests a disposition to shift its quarters. It is much more commonly met with in the young than in those in whom the fibrous structures about the joints are chiefly affected, than in those who suffer principally from synovial inflammation. As the general symptoms of its accession are variable and uncertain, and are sometimes altogether absent, the physical signs, which are very characteristic, should be jealously watched for, the chest being examined daily by the stethoscope and by percussion throughout the progress of the disease. On the first indication of cardiac mischief, active means should be taken to prevent its continuance, and, throughout its course, the physical signs should be carefully attended to, as affording the only certain evidence as to the action of the remedies and the progress of the disease, whether towards a favourable or unfavourable termination. *Cæteris paribus*, the prognosis should be more unfavourable in cases accompanied by a copious effusion into the pericardium, with great irregularity of the heart's action, than in those in which a smaller quantity of serum is poured out, and the heart is less embarrassed—more guarded in those accompanied by much constitutional depression than in those marked by tolerance of remedial measures; more cautious when, together with the cardiac inflammation, there coexists inflammation of the lungs or pleura, than when the respiratory organs are unaffected; and much more unfavourable in cases complicated by cerebral disturbance, than in those in which the intellect remains unclouded."

An abstract of sixteen cases of acute rheumatism which proved fatal, in St. George's Hospital, during the six years ending Dec. 31, 1850, are appended, in order to show the important part which cardiac inflammation ordinarily bears in producing a fatal termination, as also the age and sex of the sufferers, and the general character of the *post-mortem* appearances.

The treatment of cardiac inflammation is the subject of chapter eight.

General bloodletting Dr. F. advises, under precisely the same circumstances

as in cases of acute inflammation, uncomplicated with carditis. In cases occurring in robust, plethoric patients, with a pulse of extreme fulness or hardness, it may, he remarks, be had recourse to with the greatest advantage, and may be repeated until some impression is produced on the circulation. In such cases, he believes it will assist in allaying the inflammation, and favour the action of other remedies. In ordinary cases, however, he pronounces it to be unnecessary, inexpedient, and often injurious.

"It tends to diminish the red globules in the blood when they are already below the healthy standard, to render more irritable the already irritable and excited heart, and to favour, as he believes, the formation of fibrinous deposits on the valves. Moreover, if carried beyond the exigences of the case, it may cause an adhesive inflammation to assume a serous or suppurative character, and may prevent that peculiar and most valuable action of mercury, whereby the extent of inflammation is limited, and its products absorbed and got rid of."

Local bloodletting, over the region of the heart, by means of leeches or cups, especially the former, Dr. F. believes to be often very serviceable. When the patient is pale and weakly, and the pulse not more than ordinarily forcible, and bloodletting is deemed advisable for the relief of the præcordial pain and anguish, leeching, and not general bleeding, according to Dr. F., should be had recourse to. Cupping being reserved for those cases in which a copious bleeding is required, and in which blood does not flow freely from the arm.

With respect to mercury, our author believes that without it no case of rheumatic carditis can be safely treated. It sustains, he remarks, the good effect produced by bloodletting; it calms the violence, alters the character, and circumscribes the limits of the local inflammation; it stimulates the absorbents to the business of repair, and promotes the continuance of the natural secretions at a time when they are checked, and well-nigh suspended by the shock the system has sustained. He advises the mercury to be pushed to the extent of inducing ptyalism. He refers to the difficulty experienced in some cases in obtaining the constitutional effect of mercury; even in these, however, the remedy will exercise a most beneficial influence over the course of the disease.

Mercury must be administered with great caution to patients of a weakly, irritable, and unhealthy constitution; in such, its constitutional effects often supervene rapidly, are extremely violent in their character, and sometimes frightfully depressing; it should, therefore, if given at all in such cases, be administered in moderate doses, not too rapidly repeated, and, upon the least symptom indicative of its action, it should be at once suspended.

Opium, Dr. F. considers to be, of all remedies, that which comes most powerfully in aid of bloodletting and mercury. He therefore considers it, in full doses, to be indispensable in every case of rheumatic carditis. It not only subdues pain, but it allays irritability and procures sleep. Dr. F. is convinced that many of his patients would have fallen victims to the disease, had not their strength been husbanded by its sedative influence. In several instances of pericarditis, in which, in spite of venesection and mercury, inflammation has continued unabated, whilst the constitutional irritability has been excessive, and the heart's action rapid and violent, Dr. F. has seen the mercury omitted, and opium administered alone with the happiest and most speedy results.

A large blister over the chest is set down as another most important remedy in rheumatic carditis. When once effusion has taken place, Dr. F. considers blistering to be of all local remedies the most serviceable.

The importance of combining with the remedies demanded by the presence of cardiac inflammation those adapted to control the general rheumatic affection is insisted upon.

"Not only are they conducive to the elimination of the rheumatic virus, but," the author remarks, "they also afford most powerful aid to blisters and mercury, in removing the fluid products of inflammation. They first assist in counteracting and getting rid of the cause of the disease, and then in repairing the mischief it has occasioned. In endocarditis, more especially, alkalies and the neutral salts prove eminently useful; for, by helping to maintain the solubility of the fibrine, and so preventing its deposition on the valves, they guard against a lesion which, by the consecutive changes to which it gives rise, leads surely and rapidly to an untimely grave."

The importance of rest and abstinence in all causes is pointed out.

The remarks of the author on the first symptoms indicative of the accession of carditis, and which justify the commencement of active treatment, and on the caution to be observed in watching for any mischief about the heart, even during the patient's convalescence, are highly pertinent and deserving of close attention on the part of the young practitioner.

The chapter closes with the following important observation, which should never be lost sight of.

"In every instance in which, after all active symptoms have subsided, there still remains much irritability of the heart, it is expedient, whilst attending to the general health, to administer occasional doses of opium and digitalis, and to apply an opium or a belladonna plaster to the chest. By such precautionary measures, and by enforcing that rest which is necessary to enable the excited heart to recover itself and resume its natural mode of action, we may, in great measure, guard against those lesions which, arising after all inflammatory action has been subdued, are due to the existence of chronic irritation rather than of true inflammatory action."

Appended to the chapter are the histories of four cases, given as illustrations of the treatment recommended by the author, and of the share which each remedy takes in effecting the cure.

The ensuing chapter is a most interesting one, presenting a very able and useful view of the statistics of heart disease in connection with rheumatism. It will not admit of a satisfactory analysis.

Chapter X. treats on affections of the brain, inflammation of the lungs and pleuræ, and disorganization of the joints, as complications and consequences of acute rheumatism.

The author shows that delirium, occurring in the course of acute rheumatism, is sometimes, though rarely, referable to inflammation of the brain. More generally he believes it to be connected with acute inflammation of some internal organ, though it occurs sometimes, without any concurrent internal inflammation. The author's view of the true interpretation of the head symptoms which occur in acute rheumatism are ingenious and plausible. The same interpretation he applies also to account for the convulsions and spasmodic actions indicative of spinal irritation. He believes them to be due in the majority of cases to the direct action of the rheumatic poison upon the brain and spinal marrow, or as an effect of the same commencing mischief in the heart, lungs, or pleura.

Cerebro-spinal symptoms he sets down as always indicative of extreme danger, but not necessarily of a fatal issue. A series of cases are given illustrative of these views.

In relation to the treatment of delirium, convulsions, and coma, when they occur in the course of acute rheumatism, Dr. F. remarks:—

"If we are unable to discover any signs of cardiac or pulmonary inflammation, and from the absence of symptoms of cerebral or spinal inflammation we are led to regard the disturbance of the nervous centres as functional only, then, as in delirium tremens or erysipelas, the invasion of head symptoms should be a signal to us to support and tranquillize our patient by the administration of nourishment, stimulants, and opiates. In no case is opium, in combination with diffusible stimulants, of greater service than in this atonic form of delirium; and in none is venesection more prejudicial. If, on the other hand, we detect active cardiac or pulmonary mischief, or from the presence of symptoms of inflammation of the brain, such as excessive heat of head, injection of the eye, intolerance of light, and vomiting occurring coincidently with hardness of the pulse, and other symptoms of acute inflammation, we are led to suspect the existence of cerebral inflammation, then are we justified in having recourse to such antiphlogistic or other remedial measures, as appear called for by the symptoms in each particular instance. In such cases, our efforts should be directed to the speedy subjugation of those actions going on within either the chest or the cranium, which experience has proved to be intimately connected with the occurrence of cerebro-spinal symptoms; and on the cessation of which, it teaches us to believe we may reasonably expect their subsidence. But as it is notorious that venesection and other depletory measures have a tendency to reduce the proportion of red corpuscles in the blood, and to produce a condition favourable to the development of delirium and convulsions, we should be exceedingly cautious in having recourse to their employment, lest, by still further impoverishing the blood, and impairing the powers of the constitution, we seriously endanger our patient's recovery. In cases marked by evident symptoms of cerebro-spinal *inflammation*, it may be necessary to have recourse to bloodletting; but if in ordinary cases of rheumatic carditis, the expediency of venesection is questionable, much more so is it in those where the nervous centres are irritable, and are suffering from the effects of malnutrition, arising from an altered condition and an irregular supply of blood. Even local depletion, though sometimes expedient in such cases for the relief of active local inflammation, should be seldom practised to any great extent. We should rather endeavour to support our patient, whilst aiming at the relief of the more urgent symptoms, by means of blisters, mercurials, diuretics, and opium. We should economize strength by administering opium in doses sufficient to relieve pain and tranquillize the excited nervous centres; and, at the same time, support the failing powers of the system by means of a nourishing and stimulating diet. One exception only there is to the full, though cautious exhibition of opium. I refer to those instances in which there is a tendency to the supervention of coma. In such cases opium is not only useless, it is decidedly prejudicial to the safety of the patient, who requires a more than usual amount of support and stimulus."

The author's remarks on inflammation of the lungs or pleura, which, when it occurs, constitutes a most formidable complication of acute rheumatism, are deserving of close attention. The statistics adduced by him show that the complication is one of by no means unfrequent occurrence. In its treatment experience has proved that blisters and derivatives are more efficient than general bleeding; and that, although local depletion, antimony, and full mercurial action may be needed for the relief of excessive local action, yet, that no cure can be effected without due regard to the neutralization of the poison, and the promotion of the various excretions by which its elimination is brought about. Hence alkalies, in full doses, with opium and diuretics, are as useful here as in the treatment of the articular symptoms; active purging by the neutral salts is also of essential service. The same circumspection, however, being observed in the employment of a lowering treatment as in rheumatic pericarditis.

Disorganization of the joints is noticed by Dr. F. as another formidable complication of acute rheumatism. The liability to its occurrence usually

varies in an inverse proportion to the number of joints affected. When warm or tepid fomentations, especially the saline and sedative solution recommended by Dr. F., the recipe for which was given when noticing his general directions for the treatment of acute rheumatism, is fairly and fully employed from the first, evaporation being prevented by means of gutta percha, he remarks that articular mischief will rarely if ever happen. But whenever inflammation attaches itself with more than usual obstinacy to any particular joint, he recommends the immediate application of leeches or a blister, and their repetition if necessary whilst the system is being brought under the influence of mercury. Perfect rest of the affected joint is also enjoined; it is best insured by means of a splint.

Rheumatic gout is the subject of Chapter XI. The term is applied to those cases in which the attack partakes in part of the nature of rheumatism and in part of that of gout. In its acute form it is liable to be mistaken for acute rheumatism. Dr. F. believes it to be closely connected with malassimilation. It most commonly occurs in weakly or unhealthy individuals, or to such as have been subjected to some cause of mental or bodily depression.

"It attacks the girl just arriving at puberty, in whom the uterine functions are ill performed; it invades the stiffening articulations of the woman who has arrived at that time of life which is marked by the cessation of the monthly periods; it shows itself during the state of debility which follows a miscarriage or a difficult and protracted labour, more especially when the labour has been accompanied by flooding; it is a frequent attendant upon renal disease, and a common sequel of over-long suckling, of excessive venery, of severe and long-continued mental exercise, and of mental distress and bodily exhaustion. Neither age nor sex affords immunity from its invasion; but most commonly it shows itself from the age of thirty-five onwards, and its earliest attacks are usually seen in girls whose uterine functions are suspended or ill-performed."

Dr. F. has presented a very excellent account of the symptoms which mark the acute attack of rheumatic gout, of the complications which attended it, of the diagnosis of the disease in its chronic form, of the distortions which attend it, the nature of the changes it induces in the joints, and of the mode of detecting the disease when deep-seated joints are affected. We cannot, however, stop to present an analysis of the author's observations in reference to these subjects.

The treatment required in the acute form of rheumatic gout, according to Dr. F., differs little from that of rheumatism, except that, from the character of the persons attacked, it need seldom be actively antiphlogistic; and from the inflammation of the joints being more stationary, and the danger of structural disorganization greater, there is more necessity for the application of leeches, blisters, and fomentations to the inflamed parts. He points out the benefit to be derived in many cases from vapour and hot baths, and warm baths of various descriptions.

The change of treatment which is demanded when the patient is cachectic, and has undergone repeated attacks of the disease, is carefully indicated. Here the remedies which prove servicable in patients of a more healthy and vigorous constitution often produce alarming depression without fulfilling the object of their administration; it is necessary, therefore, to substitute others, as a combination of bark, sarsaparilla, iodide of potassium, that are calculated to improve the tone of the system, which are to be aided in their operation by change of air and scene, and judicious bathing. The directions of the author for the management of the particular symptoms which are liable to occur in individual cases, his remarks on the external applications most beneficial, and his general rules in regard to diet, exercise, and clothing, will be read with interest and profit.

In Chapter XII., Dr. F. discusses the subject of chronic rheumatism. He believes both the acute and chronic forms to be identical in their source and nature; that the acute may lapse into the chronic form, and the chronic may light up into an active state. Passing by his remarks under the heads of muscular rheumatism, lumbago, stiff or wry neck, intercostal rheumatism, rheumatism of the joints, and periosteal rheumatism, we shall merely notice the observations of the author in reference to the leading remedies recommended for the cure of the chronic form of the disease.

The ammoniated tincture of guaiacum Dr. F. considers particularly efficacious, in the dose of a drachm, or a drachm and a half, three times a day. The mistura guaiaci of the pharmacopœia is also recommended, when the diffusible stimulant contained in the former is not considered desirable. The pulvus guaiaci is considered especially useful in old lingering cases, accompanied by torpor of the intestinal secretions, and a sluggish inactive condition of the skin. It is prepared according to the following recipe: Flowers of sulphur ℥ij; cream of tartar ℥j; powdered rhubarb ℥ij; guaiacum ʒi; clarified honey ℔j; one nutmeg finely powdered. Mix. Two large teaspoonfuls to be taken night and morning.

"On the same principle," says Dr. F., "as that on which guaiacum has been recommended, many other remedies of a warm and stimulating nature have been administered in obstinate lingering cases. Among these may be mentioned camphor, the oils of turpentine, cajeput, and amber; the balsams of copaiba and Peru; and aromatic and pungent plants, such as mustard, horseradish, and the arnica montana. All these agents, either alone or in combination with opium, which often proves a valuable adjuvant, have been found extremely serviceable, and none more so than oil of turpentine." "Were it not for its nauseous flavour, the common oil of turpentine, administered in drachm or half-drachm doses, would be very generally adopted as a cure in obstinate and protracted cases. In combination with bark, I have sometimes known it particularly useful.

"Colchicum is of far less service here than in the more active form of the disease, and its administration should be restricted to those cases in which the joints are principally affected, and the pain is aggravated by heat. Under such circumstances, in combination with alkalies, diuretics, and opiates, it sometimes proves exceedingly beneficial.

"The valuable properties of iodide of potassium are seldom displayed when the muscular structures are the parts affected; but they are strikingly manifest when the patient is out of health, and the joints are suffering. In no instances, however, are its virtues so conspicuous as in those in which the periosteum is implicated. In such cases, administered in two or three grain doses, it speedily gives relief, not unfrequently removing the pain and swelling in the course of a few days; and even when the disease proves more intractable, and lingers on for several weeks, the intensity of the pain is soon subdued, and the patient's health gives tokens of improvement. Indeed, so potent is the influence of this medicine over this particular form of the disease, that in many instances the cure may be safely intrusted to its unassisted powers; but in old-standing cases, where the health is much impaired, it is advisable to combine it with bark and sarsaparilla, and to exhibit a full dose of opium at night. The bowels, in such a case, should be regulated by gentle laxatives, and the general health sustained by a full and nutritious diet."

Dr. F. has sometimes administered cod-liver oil, in half-ounce doses, when the patient has been thoroughly out of health, and in some such cases with undoubted benefit. But, under ordinary circumstances, its efficacy has appeared to him extremely questionable.

"Hydrochlorate of ammonia is a remedy," says Dr. F., "of singular efficacy in chronic rheumatism; yet, strange to say, is almost unknown as such to the profession. In no treatise on rheumatism which I have had an oppor-

tunity of consulting, do I find the slightest notice of its virtues. Yet its action on the skin is admitted by those who have watched the effect of its internal administration." "In fifteen or twenty grain doses, in combination with bark, it produces marvellously good results, and is frequently servicable when other remedies have proved inefficient. The character of the secretions improve under its influence, the skin acts more freely and regularly, and the disease gradually subsides. Its beneficial effects, however, are most remarkably exerted in muscular rheumatism; and when the periosteum or the joints are affected, it seldom affords us much assistance."

Mercury, Dr. F. considers, may be sometimes useful in obstinate cases, especially when supervening in a system poisoned by the syphilitic virus. In ordinary cases it is needless if not hurtful. It sometimes proves useful when there is excessive tenderness with puffiness about a periosteal swelling, and in cases where an enlarged joint continues in a state of irritation, uninfluenced by other remedial agents.

Opium, especially in the form of Dover's powder, and other sedatives, are useful by assuaging present pain, and affording the patient that rest which is as essential to the recovery of his health as for his hourly comfort.

Purgatives are efficient allies in lumbago, especially when the bowels are costive.

The whole of the remarks of the author on the treatment of chronic rheumatism are judicious, but the length to which we have already extended our notice of the work will prevent us from presenting any further analysis of them.

The thirteenth and last chapter is devoted to a consideration of sciatica and other forms of neuralgic rheumatism.

The author gives an excellent description of sciatica, and of the diagnosis between it and disease of the hip-joint, and nephritic irritation. He considers the disease in reference to its treatment, according to its nature and cause in different cases: as a true rheumatic affection, as connected with a syphilitic taint, as caused by gastric or intestinal irritation, as connected with gout, as symptomatic of mischief in the brain, or, as depending upon an alteration in the nerve itself, whether at its origin or in some part of its course. He believes, and we think correctly, that, according as one or other of these causes may appear to have produced the patient's sufferings, the nature and activity of the treatment should vary. But this is not all. Dr. F. remarks:—

"In true sciatica, from whatever cause arising, very different local changes may be induced, and very different remedies required for their relief. Be the affection rheumatic or gouty in its nature, or be it due to syphilis, or to a distended colon, the pain in either case is due to a cause of irritation which may either give rise to no perceptible local change, or, on the other hand, may be accompanied by a copious effusion of serum, or of serum mixed with lymph, within the sheath of the nerve. In the former case, the means already mentioned as adapted to the removal of the several causes from which the affection derives its origin, will be sufficient to effect a cure. But in the latter, the disease is more complex and less tractable. The effusion here is not, as in ordinary rheumatism, of secondary importance; it takes place within the sheath of the nerve, presses upon the nerve, impairs its function, and thus leads to malnutrition and wasting of the limb; and, if the pressure is not speedily removed, irremedial alteration of structure takes place; and the nerve, hardened by long-continued pressure, is found after death gray and shrunken.

"In every case of sciatica, then, the existence or non-existence of effusion within the sheath of the nerve, is a question of primary importance. If no effusion exists, the remedies before alluded to as best calculated to remove the different causes of irritation, will be the most efficient in removing the irritation itself, with the pain and other symptoms consequent thereon; whereas, if effusion has already taken place, measures will be needed, not only to allay existing

irritation, and remove its cause, but to promote absorption of the effused fluid, and remedy the mischief it has occasioned.

"By what symptoms, then, are we assured of the existence of effusion? I know not whether the experience of others corresponds with my own observations on this subject, but such signal benefit has often been derived from remedies applied in accordance with the views I am about to enunciate, that I cannot but think them entitled to consideration.

"At the commencement of an attack, no *certainty* can be felt as to the existence of fluid within the sheath of the nerve. The *probability* of its occurrence, however, is in proportion to the severity of the local symptoms, and the intensity of the febrile disturbance, and remedies should be selected and apportioned accordingly. If pain be the prominent feature of the attack, and be unaccompanied by febrile symptoms, it would be right to act as though no effusion had taken place; whereas, if the pain be attended by fever, it would be prudent to have recourse to measures calculated to check those actions on which the occurrence of effusion depends. But after the disease has lasted longer, and has passed into a chronic form, we have more to guide us to a correct diagnosis. If effusion is present, there is then not only local pain, but numbness and partial paralysis of the limb as the natural and characteristic results of pressure on the nerve. The nerve being compressed by the fluid within its sheath, its function is impaired, and the symptoms alluded to necessarily ensue. Hence, when a patient who is suffering from sciatica complains of *a dull, aching, and benumbing pain in the limb, causing it to feel swollen;* when this sense of numbness and increased bulk has succeeded to pain of greater intensity, accompanied by cramps and startings of the limb, and more especially when, in addition to these symptoms, there is more or less inability to move the limb, the presence of fluid within the sheath of the nerve may be inferred, and steps should be taken to obtain its evacuation, either by mechanical or medicinal means. In such cases—and how common are they in practice?—I have repeatedly seen sedatives employed freely and pertinaciously, and various antisciatic remedies made use of, with the view of effecting a cure; but until the measures alluded to have been adopted, the failure has been so uniform and so complete, that now, whenever symptoms of effusion present themselves, I always resort to that method of treatment which, whatever its *modus operandi*, is entitled to the credit of giving speedy relief."

The measures enumerated by Dr. F. as those most efficacious in checking the progress of effusion, and promoting its absorption, are, cupping, leeching, and blistering, combined with the internal administration of mercury and diuretics. He points out the particular circumstances and stage of the disease to which each is adapted; we cannot, however, follow him in his remarks under this head, nor in those he has presented on acupuncturation, and when and how it is servicable in sciatica. His observations on the value of opium, belladonna, stramonium, hyosciamus, and conium, as sedatives, and on the points to be borne in mind before deciding on their administration, as well as those on the efficacy of these and other remedies when applied externally; the influence of baths, general and local, as curative agents, and the mode of action, and the circumstances under which quinia, iron, arsenic, and other tonics prove beneficial, are all indicative of close observation and sound judgment. They may be consulted with profit.

That we have formed a very high estimate of the work of Dr. Fuller, will be already inferred from the general approbation we have more than once expressed of the author's pathological and therapeutical views, in the course of our analysis of the several chapters, as well as from the length and frequency of our quotations. The author appears to have studied the several forms of rheumatism at the bedside with care and fidelity, and he has presented the result of his observations in a shape well calculated to lead his readers to correct views in relation to the causes, character, and proper treatment of the disease. D. F. C.

BIBLIOGRAPHICAL NOTICES.

ART. XIV.—*Atlas of Pathological Histology.* By Dr. GOTTLIEB GLUGE, Professor of Physiology and Pathological Anatomy in the University of Brussels, etc.; translated from the German by JOSEPH LEIDY, M. D., Pathologist to St. Joseph's Hospital, Philadelphia; Fellow of the College of Physicians, etc. etc., with three hundred and twenty figures, plain and coloured, on twelve copperplate engravings. Philadelphia, Blanchard & Lea, 1853: folio, pp. 100.

WE are glad to see this excellent work of Gluge translated into English by so competent a hand, and put within the reach of the profession in this country. The history of the development and changes of the elements of pathological tissues, has become now a necessary introduction to the study of morbid anatomy. It can no longer be looked upon as merely accessory. Bearing the same relation to it as does normal histology to normal anatomy, it appears to us to be of still higher importance, since it has a closer and more direct bearing upon practical medicine. Whatever makes our knowledge of diseased structure clearer, must throw light also upon the plan of cure, and show us too, in many instances, where a cure is impossible. The microscopic examination of morbid products has in this way rendered essential service to medicine; the conflicting opinions of microscopists, have, moreover, gradually become harmonized, and the errors of imperfect or hasty observation corrected by time, experience, and the increased number and skill of those engaged in the pursuit. Hence, greater confidence can be placed in the stability of facts now observed, than could have been accorded a few years since.

This being, as far as we know, the only work in which pathological histology is separately treated of in a comprehensive manner, it will, we think, for this reason, be of infinite service to those who desire to investigate the subject systematically, and who have felt the difficulty of arranging in their mind the unconnected observations of a great number of authors. The development of the morbid tissues, and the formation of abnormal products, may now be followed and studied with the same ease and satisfaction as the best-arranged system of physiology. We hope that the period is not remote when it may equal this branch of study, in the fulness and certainty of its facts.

In the Introduction, are given tables of the magnitude and weight of the organs of man, in the normal and abnormal conditions.

These, which are doubtless the result of a great deal of laborious industry, will be found of much utility for reference.

In the first section, the development of the elements of the tissues is considered. Here is described the latest well-ascertained mode of cell-formation in animal structures; the analogy existing between the pathological and physiological development of cells is also shown, as well as their artificial formation. The second section treats of the combination of these elements in perfect or imperfect tissues, and arranged according to the processes of disease.

The formation of the (pathological) blastema, forms the subject of the next section. Under this head, an account is given of the derivation of the plasma from which the material of new tissues is evolved. Dr. Gluge says, that it is deposited in two modes "without a previous stasis of the blood, as in normal nutrition and with stasis of the blood-corpuscles, probably through their agency, as in inflammation." The author's views of the latter process are very clearly expressed. He divides it into the stages of congestion, hyperæmia, stasis, exudation, and gangrene, at any of which it may terminate. He makes a distinction between congestion and hyperæmia, the first consisting of "an unusual flow of blood through a certain portion of the capillary system in a given time,"

the latter in "an accumulation of blood in a portion of the capillary system, in arteries or in veins produced by a retardation of the circulation." The first is not necessarily the commencement of inflammation, but the latter is invariably its forerunner. In hyperæmia of the capillaries, the blood-corpuscles are described as accumulating and coming into immediate contact with their walls, to which they adhere, thus retarding the flow of blood and giving redness to the tissue.

"If the capillary vessels are stopped up with blood-corpuscles, all movement of the sanguineous column ceases. The so-called lymph-corpuscles increase in number, and the lymph space has disappeared. The blood-corpuscles themselves undergo the following changes: They become grouped frequently in regular columns, resembling piles of coin; their colouring matter dissolves in the small quantity of remaining liquor sanguinis; and they become irregular and fuse into a firm fibrinous mass. Or, they decrease in size, give up their colouring matter, and a portion of their fibrine, and become united by means of a soft, gray, coagulated, albuminous matter, into mulberry-formed groups, the inflammation-globules. Accompanying this change, serum, stained red, exudes from the capillary walls, and these are themselves sometimes ruptured, corresponding to the condition of the so-called inflammatory engorgement. Or, the blood-corpuscles give up their contents to the liquor sanguinis, which, effusing from the capillaries into the surrounding parenchyma, constitutes fibrinous exudation. At first, the fibrine is always dissolved in a greater or lesser quantity of serum, but rarely remains a long time in the liquid condition, as in the so-termed *hydrops fibrinosa*, most usually coagulating immediately. Under the latter circumstances, the walls of the capillaries become invisible, apparently from their having been pressed together by the exudation; and an organ in this degree of stasis, as, for instance, a hepatized lung, contains a much smaller number of blood-corpuscles than in the normal condition. The extravasation of liquor sanguinis determines, in all grades of stasis, swelling of the organ; and the impediment to the capillary circulation augments contraction of the arteries, and hence the beating of the part, which is therefore a result, and not a cause of stasis. So soon as stasis has advanced to a considerable extent, the blood yet retained within the vessels presents a decided increase in the quantity of fibrine, which is also a result and not a cause of the condition. The exudation may now be either absorbed, organized, converted into pus, or become entirely decomposed."

In this description of the microscopical characters of the pus-corpuscles, the author calls them *nuclei*. He believes them to be the nuclei of future cells, principally from "the fact that, in granulations and the formation of cicatrices, it is readily and directly conclusive that cells form upon pus-corpuscles, for the nuclei of young cicatrix cells, in appearance and chemical relation, are perfectly identical with the latter." The author says that lymph-corpuscles are undistinguishable from pus-corpuscles without nuclei; and, that "the nucleus of perfectly formed epithelial cells exhibit the strongest resemblance to pus-corpuscles." Hence, he says, that he believes no longer "in the possibility of distinguishing pus-corpuscles by means of the microscope, from physiological and other pathological structures which resemble them." His views of the structure and office of these bodies are quite new, and worth the attention of the cultivators of microscopic anatomy. The chemical relations, and the varieties of pus are next described, followed by an account of the process of granulation and cicatrization. The succeeding sections upon the histological metamorphosis of the blood, on purulent infection and gangrene are of equal interest. After these, we find a series of observations on histology, which are illustrated by the plates. These latter being the same as accompany the original work, the learner is spared the inconvenience arising from the frequent inaccuracy of the copies of microscopic drawings.

The few additions which have been made by Dr. Leidy are both judicious and important, and the translation is executed in a correct and faithful manner.

M. S.

ART. XV.—*What to Observe at the Bedside and after Death in Medical Cases.* Published under the authority of the London Medical Society of Observation. Philadelphia, Blanchard & Lea, 1853: 8vo. pp. 206.

THE Society under whose auspices this useful little volume is published, was founded about two years ago by Drs. Walshe, Jenner, and several other gentlemen, in imitation of the Parisian Society of the same name, and of which Dr. Walshe was an early and active member. The circumstances of its publication may best be understood by an extract from the preface: "Soon after the Medical Society of Observation had been formed, it was felt by the members that the labour of analyzing and comparing clinical observations would be greatly lightened, and the precision of the observations themselves increased, if the records of these were in every instance arranged on an uniform plan. The Society in consequence adopted, with some modifications, a form of arrangement of symptoms and after-death appearances, which had been framed by Dr. Walshe. The publication of this form seeming desirable, it was referred to a committee, who expanded and altered various parts of it, and finally threw it into its present shape."

The general arrangement, and to some extent the details of the plan are identical with those which originated in the Parisian Society, and which have been published in various manuals, but especially in that of Raciborski (*Precis du Diagnostic*), but there is far greater minuteness and more attention to systematic arrangement of the points of inquiry in the present than in any previous work. This, which might by some be looked upon as likely to discourage novices in the art of observation, and as therefore a fault, does not really merit blame. For the observer is not compelled to note in each patient the whole of the phenomena and conditions here enumerated. Only a part of them indeed is applicable to any particular case, and some of them are much more important than others. Hence, although working according to a uniform plan, every one is at liberty to adopt just so much of it as his convenience or opportunities enable him to do. His results, however, will acquire a greater value in proportion to the completeness of the elements from which they are derived.

The general divisions of the work are these: Part I. *The Clinical Examination of a Patient.* 1. The Personal Description and Peculiarities of the Patient in Health. Under this head, his physical and psychical peculiarities are noted. 2. Previous History, including the hygienic influences operating upon him; the General Health, Sexual Condition, and Family History. 3. History of the Attack, its Prodromata, Invasion, and Progress. 4. Actual Condition of the Patient, including Generalities; Condition of the Integuments; Organs of Locomotion, of Digestion, of Respiration, and Circulation; the Lymphatic System, Urinary Organs and Urine, Organs of Generation; the Head, and the functions of the brain; the Spinal Cord and its functions; the Organs of Sense; the Nerves; the Vascular Glands. Finally, the Progress of the Case—diet, regimen, external and internal treatment—phenomena of death. Part II. contains in minute and systematic detail the points to be noted prior to commencing a *Post-mortem* Examination, and during its progress, and of course repeats the physical inquiries noted among the symptoms besides all the other analogous ones relating to the interior of the body. An Appendix gives more in detail than had previously been done the inquiries proper to be made relative to the condition of the membranes, fluids, and certain pathological results. The following extract is subjoined for the purpose of illustrating the manner in which the study of disease is prescribed to those who would understand it thoroughly:—

"*Throat, etc. Uvula:*—length; form; thickness; direction of its axis;—surface, smooth, glazed; color—œdematous; flaccid; abscess sloughing; ulcers; vesicles; exudation, etc.

"*Soft palate:*—(particulars as *Uvula.*)

"*Fauces:*—size of opening; state of pillars (particulars as *Uvula*).—*Pain:* its direction;—other sensations, constriction, dryness, etc.;—tactile sensibility, increased, diminished.—Noisy respiration; snoring.

"*Tonsils:*—swelling and tenderness externally.—Position of tonsils; distance between them;—size; form; consistence; fluctuating;—tender to touch;—color;—surface; dry, moist, smooth, glazed, uneven; openings on surface;—œdema; abscess; sloughing; ulcers; secretions and exudations on surface.

"*Pharynx:*—size of cavity;—apparent thickness of membrane.—Surface of mucous membrane; smooth, glazed, granulated; dry, moist;—vessels apparently full;—its colour;—'stains.'—Secretions; exudations; blood on surface.—Œdema; bogginess; fluctuation; abscesses; tumours; sloughing; ulcers, and other destructions of substance; cicatrices.—Condition of follicles.—Projections from posterior nares into cavity.—*Abnormal sensations* in pharynx; burning, dryness, constriction, etc.—Tenderness.

"*Œsophagus:*—swelling in neck externally.—Examination with bougie; obstruction to passage, its seat; can it be overcome by moderate pressure?—Signs of dilatation and sacculation?—Is anything visible during retching?—*Pain* in course of gullet, during swallowing or at other times;—sense of constriction, burning, globus, etc.

"*Deglutition:*—pain during the act: its seat, extent, duration, character.—Deglutition difficult; period of act at which difficulty is perceived;—attempt to swallow productive of sense of suffocation, of spasm of muscles of throat or pharynx;—is difficulty greatest with solids or liquids?—what matters are swallowed most easily?—is a large gulp of liquid swallowed more easily than a small one?—has the patient any contrivance for rendering the act easier?—does the act produce cough?—do swallowed matters return by nostrils?—is the act affected by temperature of matters?—is the site of obstruction distinct to patient, and how?—is deglutition favoured by a recumbent posture? Frequently or constantly repeated efforts at deglutition.

"*Regurgitation:*—period after swallowing at which it occurs; attended with effort, anxiety, or nausea? accompanied by any stethoscopic sound?—Physical characters of regurgitated matters; their reaction."

To all who are convinced that knowledge is to be got by labour only; who believe that in medicine the only genius that does not lead astray is the genius of interpreting nature by reading, or even by spelling out, the phenomena through which alone she speaks to the understanding; to all who recognize the fact that the only progress ever made in medicine was the result of a close, steady, docile, and persevering study of these phenomena; and to all who are ambitious of adding somewhat to the mass of medical knowledge that shall outlive doctrines and sects—we heartily commend this little book as a timely and efficient helper, and a guide which, if patiently followed, will lead them to knowledge, and fit them to use whatever skill nature may have granted them.

A. S.

Art. XVI.—*Principles of Human Physiology, with their chief applications to Psychology, Pathology, Therapeutics, Hygiene, and Forensic Medicine.* By William B. Carpenter, M. D., F. R. S., F. G. S., Examiner in Physiology and Comparative Anatomy in the University of London, Professor of Medical Jurisprudence in University College, etc. Fifth American from the fourth and enlarged London edition, with three hundred and fourteen illustrations. Edited, with additions, by Francis Gurney Smith, M. D., Professor of the Institutes of Medicine in the Medical Department of Pennsylvania College, Lecturer on Physiology in the Philadelphia Association for Medical Instruction, etc. Philadelphia, Blanchard & Lea, 1853: 8vo. pp. 1091.

The treatise of Dr. Carpenter on the Principles of Human Physiology has been with us always a favourite work. We know of none, indeed, following it up through its successive editions, which is better calculated, on the whole, to exhibit a faithful reflection of the present aspect of physiology in its philo-

sophical and practical bearings. A sound discretion has been exercised by Dr. Carpenter, in making his selection from the vast mass of results which have been accumulated by the labours of the more recent physiologists, in admitting those only which bear the marks of correct deductions from a sufficient series of careful experiments and patient and cautious observations, or, when contradictory or inconsistent results are presented by investigators of equal authority, in adopting those most consonant with usually received views. Although in weaving his materials into a systematic form, so as to present a correct history of the phenomena which normally occur during the existence of living beings, with those general laws or principles which express the conditions of their occurrence, and the causes to which they are attributable, he may not succeed in convincing every reader of the correctness of his teachings, still, for fulness and accuracy, the account he has furnished of the facts and doctrines which constitute the principles of human physiology as now generally received, it must be conceded, has not been excelled by that of any other writer; while as a systematic treatise, the work of Dr. Carpenter recommends itself by its clearness and precision.

The foregoing remarks are especially applicable to the edition now before us, which may, in fact, be considered in the light of an entirely new work, in which the present convictions and opinions of the author are as completely expressed, as if the treatise had now been for the first time put forth, "the old materials having been incorporated with the new, rather than the new with the old, and having only been employed where they could be readily made subservient to this purpose."

The following outline of the important changes which have been made in the character and arrangement of the present edition, as given by the author in his preface, will show the extent to which the reconstruction of the work has been accomplished.

"Considering it extremely important that his readers should have a clear idea of the sense in which the terms *law* and *cause* are subsequently employed, he has devoted a few pages of the *Introduction* to an explanation of his views upon these points, and he hopes that he may be there found to have thrown some light upon the philosophy of causation, which may be of assistance to other scientific inquirers.

"In order to make room for a portion of the new matter which he desired to introduce into the treatise, he has felt it necessary to omit all those references to the structure and vital actions of the lower animals which had not an immediate and direct bearing upon human physiology; and consequently, of the first chapter of the previous editions—'On the Place of Man in the Scale of Being'—he has only retained so much as related to the characteristics that distinguish Man from the mammalia which most nearly approach him. The succeeding chapter, which treated 'Of the Different Branches of the Human Family, and their Mutual Relations,' has been extended in all that relates to man, and curtailed in that which rather belongs to Comparative Physiology, and has been transferred to nearly the end of the volume, which the author considers to be now the more appropriate place for it.

"The second chapter of the present edition, comprising a general view 'Of the Chemical Components of the Human Body, and the changes which they undergo within it,' is now for the first time introduced. Several new views will be found in this chapter, which have occurred to the author during its preparation; he would especially point to that of the respective relations of fibrine and albumen to the nutritive processes, and of the former to the gelatinous tissues; and to the general summary which forms the last section, in which the discoveries of M. Cl. Bernard, in regard to the elaboration of sugar and fat in the liver, are placed, he believes, in a somewhat novel aspect.

"From the consideration of the chemical components of the organism, and of the participation of chemical forces in its operations, it seemed natural to pass on to that of 'The Structural Elements of the Human Body, and the Vital Actions which they exhibit,' which forms the subject of the third chapter. Nearly the whole of this chapter, which includes the general doctrines of cell-formation and of vital force, in their application to human physiology, appears for the first time, in this edition.

"Passing on to the more detailed survey of the constituent parts of the human body, the first place seemed to be claimed by the blood, the 'physical characters, chemical composition, and vital properties' of which are treated of at some length in Chapter IV. This portion has been greatly extended, and almost entirely rewritten; the great importance of the subject, in its bearings on Pathology as on Physiology, having been constantly kept in view.

"The fifth chapter, 'On the Primary Tissues of the Living Body, their Structure, Composition, and Action,' is essentially the same with the third chapter of the previous edition; but a large amount of new matter, in great part supplied by the elaborate 'Mikroscopische Anatomie' of Prof. Kölliker, has been incorporated in it; and many new illustrations, chiefly derived from the same source, have been introduced. The account of the vital endowments of the muscular and nervous tissues, previously contained in other chapters, has been transferred to this, so as to make it embody a complete sketch of those physiological actions of these separate parts of the organism, which are afterwards to be considered in their relations to each other.

"In conformity with the opinion expressed by some of his friendly critics, and by many teachers of Physiology, the author has reversed the previous arrangement of the chapters which treat of the functions in detail; those relating to the organic functions being now placed *before* those in which the animal functions are described, instead of *after*. This has involved a new distribution of much of the matter which was previously treated in a connected form in the chapter on the 'Functions of the Nervous System,' since it has appeared to the author very desirable that the whole group of actions whose aggregate makes up each function, should now be considered in its connection, and thus the movements of deglutition, respiration, &c., not having been explained, as was formerly the case, in the earlier part of the volume, are described, and their connection with the nervous system examined under each separate head. As their general relations to the nervous system are previously explained, however, in the sixth chapter, the author does not apprehend that any inconvenience will be experienced from this alteration.

"The series of chapters on the several organic functions remain essentially the same as in the previous edition; but important additions and corrections have been made in every one. Thus, in Chapter VII., 'On Food and the Digestive Process,' the whole subject of Food is much more fully discussed than heretofore; and the most important of the results obtained from the study of the digestive process by Frerichs, Bernard, and other experimenters, have been embodied in the account of it. In Chapter VIII., 'On Absorption and Sanguification,' the structure and development of the Ductless Glands have been more fully described, in accordance with the researches of Kölliker, Sanders, Ecker, Gray, and others, and their relation to the process of sanguification more clearly elucidated. In Chapter IX., 'On the Circulation of the Blood,' the causes of the heart's sounds have been more fully considered; a view of the nature of its rhythmical contractions has been suggested, which the author believes to be original; and the most important among the results of Prof. Volkmann's elaborate researches on the dynamics of the movement of the blood have been introduced. In Chapter X., 'On Respiration,' the most important additions to the first section are those which embody the results of Dr. Hutchison's inquiries on the movements of respiration; to the second, the data furnished by the researches of MM. Regnault and Reiset, Prof. Scharling, M. Barral, and others, upon the amount of oxygen absorbed, and of carbonic acid exhaled; whilst the third, in which the 'Effects of Suspension or Deficiency of Respiration' are discussed, has been largely augmented by a summary of the evidence afforded by our recent experience, of the marked tendency of an habitually imperfect respiration to produce a liability to zymotic disease. Nearly the whole of Chapter XI., 'On Nutrition,' has been newly written for this edition. In Chapter XII., 'On Secretion and Excretion,' important additions have been made under almost every head; and those parts, especially, which relate to the agency of the excretory apparatus in maintaining the purity of the blood, have been extended. This chapter, however, is less comprehensive than formerly; several of the subjects which it previously included, having been transferred to portions

of the work in which they seemed to find more appropriate places; the salivary and pancreatic secretions being now treated of in the chapter on Digestion, and those of the testes and mammæ in that on Generation. Of the three subjects included in Chapter XIII., 'On the Evolution of Heat, Light, and Electricity,' the first alone had been systematically considered in the previous editions, and this has been considerably extended in the present. Under the second head, will be found some very curious observations on the evolution of light in the living human subject; and under the third is given a summary of the admirable researches of M. Du Bois-Raymond, which have been recently brought before the scientific public in this country by Dr. Bence Jones.

"It is in the Chapter (XIV.) devoted to the Functions of the Nervous System, which constitutes one-fifth of the entire volume, that the greatest additions and alterations will be found. This subject, in its Psychological as well as in its Physiological relations, has occupied more of the author's attention than any other department of Physiology; and he now offers the more matured fruits of his inquiries and reflections, with some confidence that, even if his views should hereafter require modification as to details, they will be found to be fundamentally correct, and to furnish materials of some value in Psychological inquiry, as well as in the study of Mental Pathology." "The peculiar states which are known under the designations of somnambulism, hypnotism, mesmerism, electro-biology, &c., are all considered in their relations to sleep on the one hand, and to the ordinary condition of mental activity on the other; and the author ventures to believe that he has not only succeeded in throwing considerable light upon the nature of these aberrant forms of psychical action, but that he has been enabled to deduce from their phenomena some inferences of great importance in Psychological science.

"In Chapter XV., 'On Sensation, and the Organs of the Senses,' comparatively little change has been made; several additions have been introduced, however, and some corrections made. The next Chapter (XVI.), 'On Muscular Movements,' has been entirely remodelled; the portion which relates to the vital endowments of muscular fibre having been removed to Chapter V., Section 6, and its place supplied by new matter which contains many original views, especially under Section 4, which treats of the 'Influence of Expectant Attention on Muscular Movements.' Comparatively little alteration has been found necessary in Chapter XVII., 'On the Voice and Speech,' or in Chapter XVIII., 'On the Influence of the Nervous System on the Organic Functions;' an important addition has been made to the latter, however, with reference to the influence of the state of 'expectant attention' on the operations of nutrition, secretion, &c.

"The additions and alterations which have been made in Chapter XIX., 'On Generation,' will be found to be both numerous and important, especially under the section on the 'Development of the Embryo,' which has been almost entirely rewritten, so as to bring the view of this process more into accordance with the existing state of our knowledge of it. The author has not felt it expedient, however, to enter into minute details upon this subject.

"In Chapter XX., 'On the Different Branches of the Human Family, and their Mutual Relations,' all that directly relates to this subject has been considerably extended, and many novelties have been introduced; whilst those arguments for the specific unity of the human races, which are derived from the analogy of the lower animals, have been simply referred to, having been fully dwelt on by the author elsewhere.

"The closing Chapter, 'On Death,' has been almost entirely written for this edition; the subject having been only touched on incidentally in the preceding."

The additions by the American Editor are few, but appropriate—as he remarks: "Dr. Carpenter's untiring industry left him little to add beyond an occasional illustration of the text, or notice of more recent discoveries.

We fully concur with Dr. Smith, in the confident belief "that the present will more than sustain the enviable reputation already attained by former editions, of being one of the fullest and most complete treatises on the subject in the English language." D. F. C.

ART. XVII.—*An Introduction to Clinical Medicine. Six Lectures on the Method of Examining Patients, Percussion, Auscultation, the use of the Microscope, and the Diagnosis of Skin Diseases.* By JOHN HUGHES BENNETT, M. D., F. R. S. E., &c., 2d ed., with wood-cuts. Edinburgh and London, 1853: 12mo. pp. 134.

THIS little book may be commended to the attention, not only of the student but of the practitioner of medicine. No one can profitably study disease who does not observe with method, who is not familiar with physical diagnosis, and (we may venture to add, with Dr. Bennett) with the use of the microscope. The first lecture contains instructions upon the proper method of examining patients. He recommends the plan taught by Professor Rostan, of Paris. "Its object is to arrive, as quickly as possible, at a knowledge of the existing condition of the patient, in a way that will insure the examiner that no important organ has been overlooked. For this purpose, we ascertain, in the first instance, the organ principally affected and the duration of the disease, by asking two questions: "Where do you feel pain?" and "How long have you been ill?" Let us suppose that the patient feels pain in the cardiac region, we immediately proceed to examine the heart functionally and physically, and then the circulatory system generally. We next proceed to those organs which usually bear the nearest relation to the one principally affected, say the respiratory system; and we then examine the lungs functionally and physically. We subsequently interrogate the nervous, digestive, genito-urinary, and integumentary systems. * * * * Lastly, we inquire into the past history of the case, when we shall have arrived at all the information necessary for the formation of a diagnosis." After mentioning the points for inquiry under these heads, and giving some useful hints upon the manner in which it should be conducted, he continues, "When the patient dies the examination is not completed." Insisting strongly upon the necessity of method and thoroughness in *post-mortem* researches, he says, "the object of an autopsy is threefold: 1st, the cause of death; 2d, an appreciation of the signs and symptoms; 3d, the nature of the disease." A brief summary follows of the facts which it is important to observe, together with general directions for conducting these examinations with propriety and cleanliness. In the two lectures upon percussion and auscultation, the account of these methods of exploration is ample and practical, and may be studied with advantage even by those who are no longer on the threshold of their professional career. Dr. Bennett's arrangement is very good, and his language being perfectly plain and intelligible, there is no difficulty for the learner in understanding the author's meaning.

The directness and perspicuity of the author's style is especially remarkable in his lectures on the use of the microscope. His directions for its employment are so clear, his illustrations of its advantages so apt, and the results obtained by it apparently so certain, and so easy of attainment, that one is somewhat at a loss to understand how, as a clinical adjuvant, it should have been so much neglected. Dr. B.'s familiar explanation of its mechanical construction, of the way to observe with it, and his account of its principal applications to diagnosis in the examination of healthy or diseased structure or secretions, will go far, we think, in inducing many to make a trial of its powers, who before may have been timid or skeptical. Dr. B. makes use of and recommends an Oberhæuser microscope (made for the use of physicians at his suggestion) as the most useful on account of its steadiness, power of easy adjustment, facility for observation and demonstration, and portability.

He objects to the bulk and complication of the London instruments, as also to the fact that, with lenses of a medium power, the amount of light is so great as to be detrimental to the eyes. He says: "I cannot employ Ross's fourth of an inch for fifteen minutes without feeling intense headache; and I know of more than one excellent observer, in whom the sight has so much suffered from this cause as to incapacitate them from continuing their researches. In the same manner the lenses of Brunner and Nachet give rise to a yellow light highly disagreeable;

while those of Oberhæuser, Shiek and Pistor, and Frauenhofer (with Arnici's and Plœsl's, I am not familiar), present a pale blue light most pleasant to work with, and which may be gazed at for hours without fatiguing the eye." We must refer our readers for further details, and for information which it is difficult to find elsewhere, to Dr. Bennett's book.

The sixth and last lecture is upon the "Classification and Diagnosis of Cutaneous Diseases." Dr. B. adopts the classification of Willan, as modified by Biett. With the view, however, of making it more simple and practical, he excludes from the order *exanthemata* and *pustulæ* the eruptive fevers—rubeola, scarlatina, erysipelas, variola, and vaccinia. His pustular class contains only impetigo, ecthyma, acne, and rupia. Those singular cutaneous affections which are not known in the English climate, he does not classify at all. As an introduction to the study of skin diseases, this lecture will answer a very good purpose, being concise, accurate, and practical. In fine, we cannot do otherwise than heartily commend this book for what it strictly is, an *introduction* to clinical medicine. Books of this kind are very much wanted, and, when confined to their legitimate province of opening the way to fuller research, they do not give that encouragement to superficiality and idleness which is often the unfortunate result of the popular manuals and compendiums. M. S.

Art. XVIII.—*On the Transmission, from Parent to Offspring, of some Forms of Disease, and of Morbid Taints and Tendencies.* By James Whitehead, M. D., F. R. C. S., on the Medical Staff of the Lying-in Hospital, and Lecturer on Obstetric Medicine, at Manchester, etc. etc. etc. London, 1851: 8vo. pp. 351.

The study of what have been termed hereditary diseases is a most interesting one. It is one, however, that has been much neglected; instead of being based upon a cautious analysis and comparison of accurately observed facts, our present knowledge, in relation to it, is in the highest degree vague and conjectural. A female, labouring under certain forms of disease, may unquestionably give birth to a child affected congenitally with the same malady of which she is herself the subject. This, however, is comparatively a rare occurrence, and is not what is generally understood by the hereditary transmission of disease. Those maladies most liable to be transmitted from parent to child, seldom if ever present any indications of their presence at birth, most commonly not for many years subsequently; often, not until after puberty, and occasionally not until after the meridian of life has been attained or even passed. They are hereditary in predisposition only. When they do occur, they are produced by the same class of exciting causes as induce them in those who inherit no particular predisposition. The predisposed simply exhibiting a much greater susceptibility to the influence of these exciting causes than the latter, and, hence, becoming liable to the occurrence of certain maladies under a much slighter degree of exposure to their causes.

The diseases to which a predisposition is inherited may be warded off, or even the predisposition itself abated, if not entirely eradicated, by a correct hygienic course of life. Many well-authenticated instances could be adduced in which, in this manner, a manifestly inherited tendency to gout, tubercular phthisis, epilepsy, and insanity has been counteracted. This we believe will account very satisfactorily for the immediate offspring of parents labouring under one or other of those diseases most liable, according to general observation, to be transmitted from parent to child, having lived to an advanced age without its occurrence; while, in their offspring, the disease has early presented itself. The course of life of the first, adopted either upon hygienic principles or from necessity, removing them from the influence of morbific causes, they in consequence escape disease, notwithstanding their inherited predisposition; but transmitting this predisposition to their children, in these latter disease becomes developed

whenever their occupation and modes of living bring them under the action of its exciting causes.

In order to transmit a predisposition to certain forms of disease to their offspring, it is not necessary that the parents should actually labour under these themselves. Various causes, as impure air, bad or deficient nutriment, neglect of cleanliness, improper clothing, indoor confinement, dissipated or licentious living, ill-assorted marriages, trouble, grief, and the depressing passions, generally, by which the regular performance of the several organic functions in the parents are disturbed or impaired, will very generally, even when insufficient to produce actual disease in them, impart to their offspring a more or less decided predisposition to disease, which, unless counteracted by proper hygienic measures, may be transmitted through many generations.

Hence, we find that among certain classes of society in Europe, exposed to physical privation and moral suffering, who live together in the same unwholesome localities, intermarry within their own circle, and pursue alike the same vicious course of life, a predisposition to disease is the inheritance entailed upon the children, even to the third and fourth generation.

In the work before us, the subject of inherited predisposition to disease is very ably investigated; and the subject, in one of its most important bearings, illustrated by a consideration of transmitted syphilis.

Though we cannot agree with Dr. Whitehead in all his conclusions, we return him our thanks for having directed especial attention to the subject. We do not believe that an accidental defect in either parent, as, for instance, the loss of a limb, the distortion of a joint, or the cicatrix produced by a burn or wound can be transmitted to the child. We have no reason for believing that, under any circumstances, a defect of parts artificially produced can be entailed by the parent upon the child. Connate deficiency or redundancy of parts are thus transmitted, occasionally, we admit, though very rarely. But the two cases are by no means parallel; the latter cannot, with any propriety, be adduced in proof of the possibility of the first. If, in any instance, we should expect to find a deficiency of parts, artificially produced, to be transmitted from parent to child, it would be in the case of those in whom, for so many generations back, the prepuce has been removed in the rite of circumcision. I have conversed with some of the oldest and most intelligent operators in this country, who assure me that they have not observed any remarkable difference between the prepuce of a Jewish child before circumcision, and that of other children.

Dr. Whitehead is a believer in the power of the imagination of the mother over the fœtus in utero. He supposes that peculiarities of structure and function, whether morbid or normal, in the fœtus during the term of its intra-uterine life, may be induced by external impressions which operate on the system of the new creature through the imagination of its mother, or even where the impress is limited in its effects to merely physical inconvenience. He adduces two or three cases in support of this opinion; two of them very curious, apparently very apposite and conclusive; we must confess, however, after an attentive perusal of them, they have not convinced us of the correctness of the opinion they are adduced to support: the remaining cases have little or no bearing upon the position assumed by Dr. Whitehead.

Much the larger portion of the treatise is devoted to the subject of transmitted syphilis. The author's descriptions and therapeutical directions being founded on extensive personal observations, have great value in a practical point of view. The following extract from the preface will give to our readers a general idea of the conclusions of Dr. Whitehead.

"Besides confirming the statements relative to the transmission of the syphilitic taint from parents to their children, even from parents in whom all external evidence of the disease had ceased to exist; the inquiry," Dr. W. remarks, "may also contribute towards the further elucidation of another fact of equal importance; that, namely, of the derivation of certain forms of disease, commonly considered as of a simple nature, from imperfectly cured syphilis; a doctrine much more generally believed in by physicians of past ages than by those of the present day. Children who had exhibited evidences of constitutional syphilis of

a genuineness which could not be doubted, both on account of its form and of the antecedent circumstances, were seen, some time after the first accession of symptoms had been subdued, to have relapses, at intervals varying from one to several years; the character of the disease undergoing certain changes in some of its phases, at each recurrence, but still retaining one or more of its essential attributes. In course of time, however, it gradually altered, assuming, at a later date, more the type of disease not commonly deemed to be of specific nature. For example, an infant of syphilitic parents has an attack of syphilitic erythematous disease in the second week after birth; this is speedily subdued by treatment, and the child thrives for a time. During the period of teething, or after that of weaning, an eruption of vesicular or squamous character breaks out, attributed usually to error in diet or to atmospheric influences. This also may be modified, or even made to disappear by remedies in common use. At the second teething period, often much earlier, impetiginous eruptions come out on the scalp and elsewhere, with enlarged lymphatic glands about the neck, these symptoms partaking less of the venereal character than those of earlier date. At a still later epoch, the hypertrophied glands become more prominent, some undergoing the process of suppurative inflammation, and the patient is considered to be decidedly scrofulous, the secreted matter possessing the sanio-flocculent character of scrofulous suppuration. In this way the purulent, the scrofulous, or other morbid habit of body is developed; liable to manifest itself each in its particular way, at certain critical periods of life, especially at puberty; or it may be brought into active existence by external agencies at any period, in form of chronic abscesses, arthritic affections, or white swellings, or laryngitis terminating in fatal diseases of the lungs; or the latter malady may be produced more directly by tuberculous deposit, or abscess of these organs, having in like manner a disastrous result.

"In other instances disease of the mucous tissues develops itself, the direct effect of perverted nutrition, with impairment of the assimilative function of the solid fabric. Thus the rachitic diathesis is determined. These and other immediate sequelæ of syphilis may be modified to a certain extent by treatment, but, should the cause be not fairly understood, the proper remedies are not applied, and the taint remains, to a certain extent, as a constitutional evil destined to stamp its character upon generations to come.

"On comparing the morbid phenomena thus brought about, the history of which has been carefully traced from the beginning, with others of similar aspect whose history is not known, one is led to inquire more minutely into the etiology of those affections usually regarded as of simple or rather unknown origin. In several instances of this kind, submitted to rigid investigation, it has appeared highly probable that such agencies were in operation immediately previous to the first appearance of such symptoms.

"I do not by any means attribute the origin of all cases bearing but a remote resemblance to those directly resulting from syphilis to causes of a specific nature. My wish is, having satisfied myself respecting the specific sources of some, to direct more particular attention to the subject. I have known a family of children, whose father suffered from both acute and secondary syphilis in early life, of which he was considered perfectly cured before marriage, but who had, notwithstanding, a most violent attack of secondary disease of long duration, in form of cutaneous eruptions and burrowing inguinal abscesses, commencing twelve months after marriage, and without any additional infection; his wife suffering at the same time under a train of symptoms of like nature. Two of the daughters died, before the age of twenty years, of phthisis, complicated with white swelling of the knee, in both cases diseases which had previously been unknown in the family of either parent. The two sons suffered from syphilis in the usual form during infancy and childhood, the traces of which existed in adult life. The offspring of one of these bear evidence of the same taint in characteristic form. I was personally acquainted with these individuals, and had the early history from the father himself, a man of education and probity.

"The perpetuation of sycosis is a fact sufficiently known. A case will be found in the following pages of its continuance to the fourth generation, on what I deem satisfactory evidence. In another instance, where this form of

disease existed with great severity in the second remove, in the person of a husband, the wife and offspring suffered from syphilitic symptoms of an unmistakable character, of which the latter perished. I have no means of determining the mode of origin of this malady in the first-named example; and the evidence in the second was, unfortunately, of a hearsay kind only, but it was strongly in favour of its specific nature. In a third instance, however, in which the disease was well marked in a husband, and proved fatal to both his wife and a numerous offspring, the evidence of its syphilitic origin was conclusive, or at least as convincing as such kind of evidence commonly can be. This case, should its historical validity be admitted, leads to the inference that the disease in the two preceding instances may have had a similar commencement.

"With reference to the treatment of the class of diseases under consideration, my opinion, after a varied practice in this department, remains very nearly the same as it was four years since. Whether the taint be of recent or of ancient date, I have invariably found it necessary to pursue a mild but prolonged course of treatment by means of the class of remedies denominated alteratives, aided, at the proper stages, by sea water and mineral baths, change of climate if practicable, and a rigid system of hygiene practised through a long period."

Dr. Whitehead considers that the transmission of a predisposition to disease is through some morbid condition of the blood existing in the parent, and by him communicated to the child. It would, perhaps, be more correct to say that a tendency to derangement in the organs concerned in the production and elaboration of the blood was transmitted by diseased parents to their children, as the mode in which a predisposition to disease is entailed upon the latter. The opinion of Dr. W. is thus expressed:—

"There can be little doubt that in all diseases to which a predisposition is inherited, the blood is the part of the system where the germ of the hidden evil is to be found, the pabulum which fosters its existence and growth, the agent by which its presence at length becomes more palpably manifest, and the medium through which alone we can remedially or curatively operate.

"It is highly probable that the blood, if carefully analyzed soon after birth in an individual so circumstanced, would be found to possess some characteristic peculiarity in the arrangement of its elemental constituents; that this peculiarity in most instances, if further examined, would be seen to increase progressively with the growth of the body, without interfering, for a time, with the healthful discharge of its functions. But it is only to a certain extent that the changes here implied are compatible with a state of health; a degree of disproportion is sooner or later arrived at, under which the blood becomes unfitted for the various organic requirements, and the subsequent changes, if uninterfered with by treatment, are rapid and destructive. It is unknown to what extent the blood elements may deviate in their relative proportions from what is considered the healthy standard, without visibly prejudicing the integrity of the system. In spontaneous anæmia, a disease whose proximate condition consists in deficiency of the globuline, Andral found that when the cachectic changes first presented themselves, this element of the blood had already become considerably reduced in quantity. In sixteen patients whose blood he analyzed while the disorder was yet in the incipient stage, the average amount of the globuline had fallen from 130, its healthy standard proportion, to 109 per 1000; and, in twenty-four cases in which the analysis was practised at a more advanced stage, the average was only 65 per 1000." D. F. C.

ART. XIX.—*The Nature, Symptoms, and Treatment of Consumption.* Being the Essay to which was awarded the Fothergillian Gold Medal of the Medical Society of London. By RICHARD PAYNE COTTON, M. D., &c. &c. London: 8vo. pp. 286.

DR. COTTON'S position, as assistant physician to the "Hospital for Consumption and Diseases of the Chest," gives value to his opinions upon the treatment

of phthisis. We propose to notice this portion only of his work, since his remarks upon the nature and symptoms of the disease do not call for any comment. In treating of the prevention of this disease, the author very justly condemns the too common practice of "physicking" children for every trifling ailment; he thinks that it may entail upon them a feebleness of constitution, by which they may become more apt to acquire diseases of a tuberculous or scrofulous nature. While, also, he advocates the employment of proper precautionary measures, and gives rules for the observance of a proper diet and medication, he disapproves of that excess of carefulness by which often the body becomes so enervated as to unfit it for bearing the slightest exposure. It is in the early stage of phthisis, before the deposit of tubercle can be ascertained, that the success of treatment is the most frequent and conspicuous. Dr. C. inculcates the great necessity of attention to the diet of children; he recommends animal food as "almost indispensable," change of air and out-door exercise. Iron and cod-liver oil, together or alternately, are particularly useful at this age. "The glandular enlargements, more particularly about the neck, which often complicate these cases," he says, "should be but little interfered with, especially when there are threatenings of tuberculous deposit elsewhere. I have seen the healing of strumous cervical glands rapidly followed by scrofulous disease in more important organs; and, on the other hand, I have known the supervention of some glandular affection at once check the progress of tubercular degeneration in other parts."

We cannot find anything particularly new in Dr. C.'s treatment of the disease when fully established; he meets its symptoms and complications with the latest and best remedies. He confirms the statements of Dr. T. Thomson, with regard to the usefulness of the trisnitrate of bismuth in the diarrhœa of phthisis; he gives it in doses of five grains every four or five hours. In the laryngeal complications of pulmonary phthisis, the author has used, with great advantage, Dr. Horace Green's instrument for the introduction of a strong solution of nitrate of silver into the opening of the larynx. He says: "I have known the voice regained, the irritable cough removed, and the tenderness and difficulty of swallowing dissipated entirely by it; indeed, I think we might almost speak of its curative effects (so far at least as the larynx is concerned) in some very early cases." "I would not advise it to be practised, however, when there is reason to believe that the mucous membrane is *extensively* ulcerated, nor when the pulmonary disease is in a very advanced stage, and the strength of the patient much exhausted." He states that he has known the practice to be prejudicial under these circumstances, increasing the cough and weakening the strength of the patient. Dr. C. considers inhalations to be of very trifling use in this complication.

The author has had a large experience with the cod-liver oil. We subjoin the results taken from a table of one hundred cases in which he employed this remedy, *these* being "selected from many others upon no other grounds than the completeness of their history."

"Thirty-one patients were *greatly improved;* twenty-one of these were in the first stage; six in the second stage; and four in the third stage. Of those in the first stage, five entirely regained their health, and, were it not for the chance of a relapse, might be fairly said to have been cured; nine resumed work, enjoying a complete arrest of their disease; and seven failed to report themselves finally at the hospital." * * * * *

"Twenty-six patients were *moderately improved.* Of these, eighteen were in the first stage; four in the second stage; and four in the third stage." * *

"In forty-three cases, however, no improvement was observed. * * * These were also in various stages of the disease. Eleven were known to have died, many were obviously becoming worse when last observed, and several ceased attending at the hospital."

It may be seen that Dr. C. claims no case of cure after the first stage of the disease, and even speaks with some reserve of the ultimate chances of those five whose health to all outward appearance was perfectly restored. Dr. C. did not observe that the degree of improvement was in proportion to the increase of weight, several who had gained the most, not being the most im-

proved. "Two remarkable cases will be seen, in which the weight was augmented, one to the extent of three ounces, and the other to that of twelve ounces weekly, although at the same time the tubercular disease was advancing; in one of these death took place suddenly; the other was lost sight of, but was supposed to have ended fatally." Dr. C. uses the pale oil. He says: "None should be employed which is not clear, pale, and as nearly as possible tasteless; the dark coloured and impure oils, which were at first thought superior to the others, are unfit for use," on account of the disgust and nausea they produce. It should be taken midway between meals, and in some agreeable vehicle; the author recommends new milk or some light wine. He thinks the emulsions given to disguise the odour and taste, are far less beneficial than the pure oil. The addition of hydrocyanic acid or of creosote he has often found effective in making the oil agree with the stomach; in other cases a light bitter answers the same purpose. Dr. C. states that he has made repeated trials of the train oil, spermaceti oil, and neat's-foot oil; as well as of linseed, almond, and olive oils. The animal oils were productive of a marked improvement in the patient's condition, but still inferior to the cod-liver oil. The above-named vegetable oils were given in thirty cases, in all of which the improvement, if any, was very trifling. "It was singular, indeed, to observe the rapid improvement which often followed their exchange for the *oleum aselli*." Upon one occasion, after the linseed oil had been taken for nearly a month with no success, the cod-liver oil completely restored the patient's strength, and added to his weight one stone and one pound within six weeks; and, in another example, after having prescribed the linseed oil apparently with signal success, the health being improved, and the weight greatly increased, he discovered that the hospital supply having become exhausted, the patient, dissatisfied with his improvement, had been taking, of his own accord, the *oleum aselli*.

Dr. Cotton's book is a good, clearly written, and practical treatise, with no pretensions to novelty, but accurate and thorough, although sufficiently concise. We think the author has found the golden medium between brevity and prolixity. The award of a gold medal to this essay, by the Medical Society of London, proves how highly it was thought of by the profession in that city.

M. S.

ART. XX.—*A Discourse on the Times, Character, and Writings of* HIPPOCRATES; *read before the Trustees, Faculty, and Medical Class of the College of Physicians and Surgeons at the opening of the Term* of 1852–3. By ELISHA BARTLETT, M. D., Professor of Materia Medica and Medical Jurisprudence. New York, 1852. Published by the Class. 8vo. pp. 72.

FROM the exordium of this discourse, it appears that Dr. Bartlett selected his subject in despair of being able to say anything new upon the customary topics of introductory lectures. In former addresses, he had already run the round of those exciting themes which he now somewhat disdainfully recalls, as one might allude to juvenile follies that deserve less blame than pity. In his weary search after a topic that he may handle with less repugnance, he is content with no resting-place until he finds himself hard by the shrine of the Coan Esculapius. Here, indeed, was a natural termination to his journey; and it is no wonder that he paused before the temple to admire "its Ionic columns, and its ornamented friezes of Pentelican marble, glittering and flashing in the sunlight, as he watched them through the swaying branches of the ancient oaks, chestnuts, and elms, that make the sacred grove of the temple." No wonder that he is unable to depart; for "near a column of the temple, and holding a roll of papyrus in his left hand, stands HIPPOCRATES," surrounded by a crowd of youths, whose earnest and intelligent faces, whose dress, air, and bearing, "show plainly enough the superior refinement and culture of the class to which they belong." In such company, he might well

be contented to remain, and it is natural that he should take pleasure in bringing his hearers into the same august presence.

Dr. Bartlett evidently is not of their way of thinking who fancy that the sun of science rose when their own particular star glimmered above the horizon, and must reach the zenith when *it* shall culminate; but rather that the luminaries of science, like the hosts of heaven, are forever sweeping onward, and diffusing a not unequal light upon the successive portions of time and space. He feels sure that his auditors will not neglect the present; they are governed by human motives, and interest will not permit them to be negligent of what will palpably serve their ends. But he is not quite persuaded that they are out of danger of, if not already converts to, the heresy which denies the unity of science, and makes its sectaries blind to the ties which link the present to the past. He therefore thinks it well to remind this stripling time that it had no such miraculous origin as Minerva, but is the product by ordinary generation of many centuries, and bears in its form and features the proofs of its long and honourable descent.

It is a pity that the student had not more leisure for obtaining such a knowledge at least of medical history as might allure him to a personal investigation of the sources of the science and art he professes to cultivate. There is no room for it as an adjunct to any one of the courses of instruction he now follows, crowded as each already is with its own proper subjects, and no time for it in the brief five months which in the leading schools are devoted, during the first year, to making the student feel bewildered by the multiplicity of new ideas presented to him, and, during the second, to leading him the same paths over again with a somewhat less faltering step. But there might be found in some of our more eminent colleges a certain number of third-course students, who, with the more cultivated of the resident graduates, would gladly form a class for a lecturer capable of treating the History of Medicine in a proper spirit. Such a spirit we conceive to be different from that which has inspired nearly everything that has been written upon this subject. Histories of Medicine have, for the most part, been chronicles of contending sects, analyses and comparisons of hostile doctrines; doctrines which, whether victor or vanquished, have been buried under the waves of time. To the young, especially, the narrative of such contests is fastidious in the extreme; they exclaim of the lecturer, as Hamlet of the player, "What's Hecuba to him, or he to Hecuba?" they can feel no interest in the quarrel for a prize which long ago became worthless. But were the discourse of what was actually known to the ancients; did it estimate and measure the gradually rising heap of positive knowledge; did it trace the stream which now supplies us to its fountain, and describe the tributaries which from time to time swelled its flood, rather than picture the gayly decorated barks which float, and ever and anon fight, upon its surface, it would then inspire more respect for the past, more zeal for the present, and more hope for the future. We throw out this hint merely; the occasion will not permit us to develop it. An expression of the thought was prompted by the estimate which Dr. Bartlett, in common with many others, sets upon the method of medical observation which Hippocrates inculcated, and which for the last half century has been growing to be more and more dominant in the schools which have most illustrated our profession.

Dr. Bartlett finds in the *oral* teaching of Hippocrates one of the main elements of its success. The following passage may be commended to those eminent gentlemen who do not fear to assign a secondary place to this method of instruction:—

"One of the most potent agencies in the development of Greek intellect, and the advancement of Greek civilization, consisted in the general prevalence of public teaching and recitation. For many successive centuries, it was from the living lips of bards and rhapsodists, kindled with coals from the glowing altars of patriotism and religion, and not through the medium of any cold and silent written records, that the immortal strains of the Iliad and the Odyssey rang through the land, and were made literally familiar as household words."

The author, then, quaintly enough says we may imagine what would constitute the theme on "the opening or closing of one of his courses of instruction—

the Introductory Lecture, or the Valedictory Address to the graduating class of the school of Cos, at the term of the first year of the 95th Olympiad. . . .

"He would have warned his hearers against the seductive but dangerous influences of the philosophers. These men, he would have said, are, for the most part, idle dreamers, and they are nothing else. I know them well. They affect superior wisdom, and they look down disdainfully upon the physician, and the patient observer of nature. They seem to think that the economy of the universe, including the human system in health and disease, can be ascertained and understood by a sort of intellectual divination, which they call wisdom and philosophy, but which is in reality only empty hypothesis and idle speculation. He would then have entered into an examination of these systems; he would have exhibited their radical errors and defects—he would have compared them with the humbler philosophy of observation and experience, and he would have shown that they had accomplished nothing, and that in the very nature of things they could accomplish nothing, for the advancement of real knowledge."

By way of helping to explain the wonderful acquirements, and the still more wonderful wisdom of Hippocrates, the author reminds us of the fact that he lived in perhaps the most intellectual age since the birth of civilization—the age of Pericles—when Phidias, and Æschylus, Sophocles, Euripides, Anaxagoras, Socrates, Democritus, Herodotus, Thucydides, Xenophon, and Aristophanes, were building up a fame which is still undiminished, and must flourish while the world endures. The glory of the first great physician is, and can be, no less than theirs. We cannot follow the author in his sketch of the state of Grecian civilization when these heroic figures appeared upon the stage, nor in his enumeration of the sources of knowledge whence his subject drew his stores of wisdom; but we must join with him in regretting that the athletic exercises by which the grace and vigour both of body and soul were developed in the Grecian youth, should be so generally neglected in our own time. How much freer scope would the spirit have, and to what loftier heights would it not soar, but for the poison, born of stagnation, which infects the blood of modern generations. Mental and moral health are most apt to be united with masculine vigour and activity.

It is unnecessary to accompany the author either in his analysis of the works of Hippocrates, or his inquiry into the origin of Greek Medicine. To sketch them would be merely to hold up the shadow of a shade, to embody the essence of an abstract. There is in connection with the last-named subject an idea which is qually striking and just. Dr. Bartlett, in opposition to those who trace the medical knowledge of Greece to Egyptian sources, is disposed, we think, to undervalue these latter. However this may be, his illustration is still elegant and apposite. "If," he remarks, "Greece received anything from Egypt, it was like the wheat taken from her dark old sepulchres, where it had lain dormant for ages, and which germinated, and brought forth its full-headed and golden sheaves, only when planted in her own pregnant and prolific soil."

In the latter part of his discourse, Dr. B. rehearses the famous oath which is called after the name of Hippocrates, and which, it may be hoped, is familiar to most of our readers. Most heartily do we concur in the wish of the lecturer, that the use of this, or some equally solemn adjuration, might be revived on the commencement days of our medical colleges. It would be a noble spectacle to see a band of young men arise, and with outstretched hands pledge their honour to observe the moral and professional laws of the brotherhood into which they are entering. It would add one more to the many restraints which daily examples of misconduct and disgrace show to be more necessary now than ever:—

"It has often seemed to me a matter of regret, that this old usage should not have been continued. There is danger, I think, in this intensely practical and utilitarian age, that we may undervalue the influence and importance of these moral sanctions—of these appeals to our higher nature. The study and the practice of our art stand in need, both of them, of all the elevating and ennobling influences that can be brought to act upon them. And this formal and religious recognition of his duties, by the young physician, would be as

appropriate and becoming, as it would be salutary and preservative in its influences. If our art is not strictly divine, it has duties and relations that are sacred—there is something sacerdotal in its offices and character, and it would be well for the young physician that his assumption of its responsibilities and obligations should be attended, like the consecration of the ancient priesthood, with the pomp of solemn and significant ceremonial."

With this quotation we close our notice of a Lecture. which, in style of expression, range of thought, and quality of sentiment, is much above the ordinary standard of occasional discourses. A. S.

ART. XXI.—*An Inquiry how far Consumption is curable: with Observations on the Treatment, and on the Use of Cod-liver Oil and other Remedies; with Cases.* By JAMES TURNBULL, M. D., Physician to the Liverpool Infirmary, &c. &c. Second ed., enlarged. London: Churchill, 1850: 8vo. pp. 106.

DR. TURNBULL arranges his evidence in favour of the curability of consumption under the following heads: 1st. *Evidence from pathological facts.* The absorption of tubercle, which Dr. T. considers to be no longer of doubtful occurrence; its obsolescence, as described by Rokitansky; the calcareous concretions so often found in the lungs in the midst of tubercles, or contained in an old tubercular cavity; the cicatrices which are found, indicating the healing of vomicæ, are all referred to by the author as affording valuable proof of the curability of the disease. The two last pathological facts enumerated, he says, "are not by any means rare, indeed they are very common." In support of this assertion, the statements of Rogée, Boudet, and Dr. Hughes Bennett, of the frequency with which they met them in their examinations, are quoted by the author. These reports are probably familiar to most of our readers. After showing what evidence of the curability of consumption may be gathered from "*the change produced in the symptoms,*" and still more clearly from the amelioration revealed by *the physical signs*, the author comes to the *statistical proofs of its curability.* Reference, however, is only made to the Report of the Hospital for Consumption, from which it appears that complete restoration to health was effected in 4.26 per cent. of the cases. The most favourable results were obtained in the first stage; "nearly one-half were much relieved." The author, in the next chapter, speaks of the influence of emphysema of the lungs in retarding the progress of tubercular disease, and expresses the opinion that pregnancy has a marked influence of the same character.

Dr. Turnbull's management of the disease presents no peculiarity. He thinks highly of the cod-liver oil, and perseveres with it when it does not disagree with the stomach, increasing its efficacy by creosote, or by the iodide of iron. He uses counter-irritation, local inunction of the iodide of lead, and the usual palliative treatment for cough, diarrhœa, and other complications. Finally, the author reports thirteen cases of his own, gathered from hospital and private practice, to show the curability of consumption. We accept them as affording gratifying evidence of the happy effect of judicious treatment; if we must be reserved in expressing belief in the full recovery of these cases, or venture to doubt the accuracy of diagnosis, in view of the very rapid manner in which health was regained, it is not by any means from want of belief in the possibility of the disease being arrested occasionally at any stage, but from the absence of sufficient evidence in these cases reported by the author. The hopeful view his experience has enabled him to take of the curability of phthisis, is encouraging and worthy of imitation, if only it might induce some to abandon the common palliative routine practice, who follow it from an apathetic view of the value of medical resources. M. S.

ART. XXII.—*Recherches sur les Calculs de la Vessie, et sur leur Analyse Micro-Chimique. Thèse pour le Doctorat en Médécine. Presentée et Soutenue par* SAMUEL LEE BIGELOW, M. D., etc.

The Micro-chemical Examination of Vesical Calculi. By SAMUEL LEE BIGELOW, M. D.

THE essay, whose title we have thus briefly translated, is a thesis, presented to the Faculty of Paris, by a candidate for the honours of its degree. The author, Dr. S. L. Bigelow, an American, has been successful, and we understand that his thesis has attracted considerable attention among those whose studies have taken a similar direction. With the thesis is an atlas of plates, admirably accurate, and drawn by the author himself with great artistic skill.

During his investigations, Dr. Bigelow analyzed about four hundred calculi, comprising the whole collection in the Dupuytren Museum at Paris.

The first chapter contains an elaborate review of the ultimate elements of calculi, and a comparison of the results of other observers, both French and English. Since these analyses gather part of their interest from having been made upon the calculi of different races and in different countries, we regret that Dr. Bigelow has not added the results of Dr. Peters's analyses of calculi in the museum of Transylvania University.

After a classification of vesical calculi, founded upon their organic, inorganic, or mixed nature, each element is reviewed in turn with a view to its chemical and physical characters.

Before noticing the distinctive and most original part of this essay, we must point out one or two errors into which Dr. Bigelow has been led. Thus, in speaking of that rare calculus, uric oxide, he states that it has been only once observed and analyzed (Marcet). There are, however, a number of such calculi on record; and, after the elaborate examination and analysis of a large uric oxide calculus by Liebig and Wohler, we can no longer regard its existence as doubtful.

Although Dr. Bigelow's analyses were carried even to the detection of those elements which, like iron, exist in but small amount, he does not seem to have met with sulphur in any calculi save those of cystine. We have found it almost always in vesical calculi. Iron is found in vesical calculi as frequently as copper may be detected in biliary concretions.

Chapter fourth contains a very admirable description of the mode of analyzing calculi, and of the application of the microscope to chemical uses.

Since our appreciation of chemical tests depends upon the appearances which reactions and precipitates offer to our eyes, there may be differences so minute as to force us to resort in turn to other and secondary tests. In place of this, Dr. Bigelow carries on almost all his processes upon the field of one of Nachet's new chemical microscopes, invented, we believe, by Professor Lawrence Smith.

We will not attempt to trace Dr. Bigelow through his processes. It is enough to say that the crystalline or amorphous forms of precipitates become plain upon the field of our glass. Evaporations take place, crystals form and are redissolved, and the action of reagents is viewed all within the compass of a drop of fluid. This Lilliputian chemistry becomes very convenient when we work, as we often must, with very small amounts.

When once micro-chemistry has become, as it promises to become, a science, we shall place our precipitates under our lenses, and there ascertain their nature from our knowledge of the proper forms of their crystals, or from their amorphous nature. Already we note the approach to this in the care with which Lehmann has indicated the minute crystalline form of the substances which are treated of in the first volume of his Chemistry.

The observer who shall do for chemistry generally that which Dr. Bigelow has here done for the chemistry of vesical calculi, will greatly lessen the labours of those engaged upon qualitative analysis. At the close of his essay, the author gives us a very good drawing of the microscope with which his researches were conducted. It is so arranged that the optical portion of the instrument lies below

the platform, and consequently out of reach of the fumes of chemical reagents, which may therefore be employed with the utmost freedom.

Dr. Bigelow, in his beautiful plates, has given us the forms of almost all the precipitates met with during his analyses. Some of these forms are new to us; others we recognize from personal experience as perfectly accurate representations of their several classes.

We are glad to learn that Dr. Bigelow is already engaged upon a more extensive work on the Urine of Health and of Disease, and we hope to have the pleasure of laying his results before our readers at a future period.

The essay which we have thus glanced over is the first definite advance towards the development of micro-chemistry as a practical everyday resource of the analytical laboratory. With this feeling, we congratulate Dr. Bigelow upon the contributions thus made to the science of analysis. S. W. M.

Art. XXIII.—*Records of Maculated Typhus or Ship Fever, with Suggestions of Treatment. Being the Result of a Series of Observations made during the prevalence of this Disease at South Boston and Deer Island Hospitals, in* 1847–48. With Plates. By J. B. Upham, M. D. New York, 1852: 8vo. pp. 60.

These records, published originally in the *New York Journal of Medicine*, present a very excellent delineation of the character, course, and ordinary *post-mortem* appearances peculiar to the typhus fever usually met with among the immigrants from on board of the crowded and often badly provided passenger ships, which of late years have arrived in such rapid succession in most of the Atlantic ports of the United States, with judicious suggestions in reference to the treatment of the disease.

To the correctness of Dr. Upham's delineation of ship fever, we can bear testimony, having had an opportunity of seeing much of it at the Lazaretto Hospital of this Port, during our service as a member of the Board of Health. But the most interesting part of the present records is, that in which the morbid anatomy of a most grave and frequent sequel of the disease is pointed out. This is a diarrhœa, attended with frequent exhausting discharges from the bowels, always thin in consistence, and, though at first of a light colour, becoming, if the patient does not speedily sink, dark and extremely offensive.

"It commonly made its appearance," remarks Dr. Upham, "during the latter stages of convalescence, and was brought on by imprudence in diet, especially if accompanied by premature exposure to cold and wet. But, sometimes it could be traced to no satisfactory cause. Its importance in a therapeutical point of view will be recognized, when we state that, at both the hospitals named, it was the cause of the majority of the deaths that occurred from typhus, up to the time the autopsies detailed in the following cases were made."

The frequency of the occurrence of the sequel to typhus fever here alluded to, and its uncontrollable and destructive character, were noticed in the cases which fell under our notice at the Lazaretto Hospital of the Port of Philadelphia. To the consideration of its pathological causes, the attention of Dr. Upham was early directed at the House of Industry, at South Boston, in the spring of 1847.

"Its intractability to the ordinary remedial measures, and its almost invariably fatal termination, were well calculated to rouse inquiry and investigation. We had been able to find no account of its morbid anatomy among the British writers, and had, up to this time, made no *post-mortem* examination of such cases, with a view to ascertain, if possible, the pathology of this sequel to the fever, on which might be based a rational plan of treatment: a series of clinical and autopsical investigations were instituted, the results of which are given in the pages which follow. These results, so far as we can learn, had previously been unknown, or wholly overlooked. To our view, they have an important bearing on the therapeutical management of the fever, in both its primary and secondary forms, and will tend to throw light upon the mooted points in its pathology."

Five cases are detailed in which the secondary lesion presented itself. The average duration of the fever in these cases was sixteen days; that of the secondary affection, thirteen days. The period in the convalescence, in which the diarrhœa first manifested itself, was the nineteenth day; and from the first accession of fever, the forty-seventh; which last two conditions, Dr. Upham remarks, would fall short, were a larger number of cases given.

We present the pathological appearances discovered after death, in one of the cases given by Dr. U.; it will convey to the reader a correct idea of their character.

"Externally, there appears some discoloration of duodenum, and upper part of jejunum, more at lower half of ileum, descending colon, and rectum. Both small and large intestines contain in every part a grayish, pultaceous fluid, in considerable quantity. A few small collections of fecal matter, in colour and consistence like chocolate, found in lower portion of ileum. Veins of submucous cellular tissue a little engorged in duodenum and upper part of jejunum; mucous membrane in these portions natural, as also throughout remainder of jejunum and upper half of ileum, from which point injection begins to be marked, accompanied by thickening. This condition of the membrane increases till within about two and a half feet from ileo-cæcal valve, when both the congestion and thickening become strongly marked, appearing here and there, for the space of a few inches in extent, in the form of transverse lines raised from the general surface. Near the ileo-cæcal valve, to the extent of four inches, this ridged appearance is remarkable—the elevations being from a line to a line and a half in height, and one or two lines in breadth. Within a couple of inches of the cæcum, are observed a few points of ulceration, of the size of a pin's head, extending partly through the mucous coat. In but one instance are Peyer's patches visible, it here presenting in a slight degree the shaven-beard appearance, the thickening elsewhere noticed ceasing at the border of the patch, giving it a depressed appearance. The cæcal extremity of colon shows considerable congestion and thickening, with commencing points of ulceration; these appearances increase along the ascending and transverse portions, and are still more marked in descending portion and upper part of rectum. None of the ulcerations in this case exceeded in size a split pea; they are confined to the mucous coat."

In reference to the peculiar lesions just detailed, Dr. Upham remarks that, in all the subjects examined, they were more or less developed. In three of the five cases detailed they were very prominent, but less marked in the other two. It is worthy of notice, he adds, that, in the latter, the preceding fever was milder and of shorter duration.

"It would seem that there exists an intimate connection between the conditions of the intestinal tract in primary typhus, and the changes which occur in the small intestines in the secondary disease—the latter correspond in situation with the uniform congestion and discoloration pointed out in the preceding autopsies of subjects that died in the acute stage of the fever. From these analogies, we are led to reflect upon the probability of a particular direction to these parts of the morbific influence from the first, and thereby induced to modify our treatment in the acute stage, so far as to avoid, from the commencement, all that could irritate these sensitive portions of the digestive tube, whether as food, drink, or medicines; believing that these specific morbid effects could better thus be avoided, than remedied when once induced." D. F. C.

ART. XXIV.—*A Treatise on the Causes, Constitutional Effects, and Treatment of Uterine Displacements.* By WILLIAM EDWARD COALE, M. D., Member of the Boston Society for Medical Improvement, etc., etc., etc. Boston, 1852: 8vo. pp. 52.

THIS short treatise on uterine displacements, which appeared originally in the *Boston Medical and Surgical Journal*, is well deserving of an attentive perusal on the part of every practitioner—especially of such as are liable to be

frequently consulted in cases of females labouring under ailments in which the uterus is supposed to be either directly or indirectly implicated.

The pamphlet before us is not offered as a comprehensive treatise on the displacements to which the womb is subject. The main object of Dr. Coale in its publication, is to direct attention to some practical views with regard to the causes of these affections, and to the means of treating them that experience has taught him to be most efficacious. To neither, however, does he claim the merit of originality—but, he thinks that "where certain of the causes which he lays down as important have been ascertained by others, they have not been properly appreciated; and, consequently, methods of treatment based upon them have been too much slighted, if not entirely overlooked."

The opinions advanced by Dr. Coale, in respect to the causes of uterine displacements are, we believe, in their general outlines, perfectly correct. We had many years ago deduced from our own observations views similar to his. An attentive study of cases that have fallen under our care, in which the womb in young unmarried females had become more or less dislodged from its normal position, has convinced us that not only this dislodgment, but also nearly all the leading symptoms by which it is usually accompanied are dependent upon weak, relaxed, and excitable condition of the body, generally resulting from defective nutrition, a sluggishness in the performance of many of the more important of the functions of life, and a morbid susceptibility of the nervous system, caused by radical errors in the mode of living pursued by females generally, and too often by a violation of every precept of a sound hygiene in their physical training from infancy to womanhood. The success we have met with in the removal of uterine displacements and their attendant evils, by pursuing a course of treatment based upon the views referred to, has confirmed in our own mind their correctness.

The attention of physicians has been too exclusively directed to the abnormal positions of the uterus—and to these have been too generally referred all the suffering and ill-health under which the patients in whom they occur are found to labour. As a necessary consequence, the main object in the management of these cases has been to restore the uterus to its proper position, and to retain it there by a variety of mechanical means—useless, if not positively injurious, in many cases, and in none absolutely necessary, excepting "as an assistant during the first periods of the treatment to relieve speedily an urgent and embarrassing difficulty—the disposition of the uterus to descend."

We fully concur in the remark of Dr. Coale, that many practitioners have been induced to look upon uterine displacements too much in a simply mechanical point of view, and to shape their remedies accordingly.

"The consequence has been, that local causes have been too much insisted upon as accounting for the origin of these affections, and pessaries and abdominal supporters have been too much relied upon in the treatment of them, to the disregard of remedies intended to restore the health generally, and to give tone to the system at large." D. F. C.

Art. XXV.—*Manual of Physiology.* By William Senhouse Kirkes, M. D., Licentiate of the Royal College of Physicians, Registrar and Demonstrator of Morbid Anatomy, at St. Bartholomew's Hospital. Assisted by James Paget, F. R. S., Lecturer on General Anatomy and Physiology at St. Bartholomew's Hospital. Second American from the second London edition, with one hundred and sixty-five illustrations. Philadelphia, Blanchard & Lea, 1853: 12mo. pp. 568.

In the present edition, the Manual of Physiology has been brought up to the actual condition of the science, and fully sustains the reputation which it has already so deservedly attained. We consider the work of MM. Kirkes and Paget to constitute one of the very best handbooks of Physiology we possess—presenting just such an outline of the science, comprising an account of its leading facts and generally admitted principles, as the student requires during his attendance upon a course of lectures, or for reference whilst preparing for examination. To those in whose professional education physiology does not

constitute, as in that of the physician, an essential item, but who feel desirous to acquire a general knowledge of the vital conditions, phenomena, and laws of the human body in a state of health, the present manual, also, recommends itself by its faithfulness, clearness, and precision.

The text is fully and ably illustrated by a series of very superior wood engravings, by which a comprehension of some of the more intricate of the subjects treated of is greatly facilitated. D. F. C.

Art. XXVI.—*Biographical Sketch of J. Kearny Rodgers, M. D.*, Fellow of the College of Physicians and Surgeons of the University of the State of New York, and one of its Trustees; Surgeon to the New York Hospital, and New York Eye Infirmary; Consulting Surgeon to the New York Lying-In Asylum, of the Institution for the Blind, and of the Emigrants' Hospital; formerly President of the New York County Medical Society, and Vice-President of the Academy of Medicine; and Honorary Member of the New York Pathological Society. By Edward Delafield, M. D. Read before the New York Academy of Medicine, and published under its auspices. New York: 1852.

This is an exceedingly well-written and faithful memoir of one of the most distinguished surgeons of our country, contributed by one who was a fellow-pupil, and through life a steadfast friend, and who has himself reached to the highest distinction in another branch of our profession.

We regret that we cannot insert some extracts which we had marked for the purpose, but we have only space for the following, which we select not only as in the highest degree honourable to Dr. Rodgers, but as an example to be held up for all to follow:—

"A striking feature in the professional character of Dr. Rodgers was strict integrity, in the fullest meaning of the word. His patients were always sure of obtaining his opinion of their cases with perfect frankness. He made no flattering promises in doubtful cases, and especially avoided surgical operations whose necessity and advantage were not fully apparent. He adopted literally and faithfully the maxim of his great master in surgery, Sir Astley Cooper—'Never to perform an operation upon another, which, under like circumstances, he would not have had performed upon himself.' Nor did he, like too many others who rank high as surgical operators, ever operate upon a case which he considered not a proper subject for the knife, merely because the patient wished it. If there be a reprehensible practice among us, it is this; and sad it is to hear men of undoubted skill and general fair fame justifying themselves, when detailing operations in cases where no probability of success existed, by this very plea. It certainly should be the surgeon's own judgment which should decide such a case, not the patient's wishes; for, much as a person may desire an operation, he trusts at last that the surgeon will not perform it if he do not have good hope thereby to save his patient's health or life. Dr. Rodgers was decided in his opinions and practice in this matter, and never yielded to the temptation his great operative skill put in his way, of operating for his own sake, not his patient's. He thought, with Hunter, that 'when the surgeon takes up his knife he lays down his science,' and left no appropriate surgical means untried before he resorted to operation.

"There was one disease, especially, in which he took strong ground in opposition to the every-day practice of surgeons—Cancer of the female breast. We all know how rarely operation is successful in this disease. He early doubted of its propriety in any case, and one of the first subjects which deeply engaged his attention was the propriety of the operation in any case of this disease. He lost no opportunity of conversing with every surgeon he met with, on his experience in such cases, and corresponded with many of the first operators in Europe and our own country on the same subject. He very soon adopted the opinion firmly, that the operation, if performed at all, should be the exception, not the rule; and almost reached the result at last, that it was never justifiable in true Scirrhus."

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

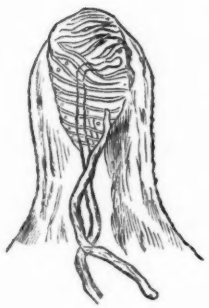
MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *Structure of the Sensitive Papillæ of the Skin.*—Our knowledge of the way in which the nerves of sensation terminate in their respective organs is as yet very inexact, and the structure of these organs themselves has been in many respects but imperfectly made out. All acknowledge in the ear, and in the eye, a curious and complicated apparatus suited to receive the impressions of the special object of each of these senses; but in respect of the other three senses, such a relation is less perfectly understood. The researches of Todd and Bowman on the tongue have, however, done much to advance our knowledge of the organ of taste; and Rudolph Wagner (in *Müller's Archives*, 1852, p. 493) has given interesting drawings and descriptions of certain peculiar bodies, called by him *corpuscula tactûs*, in the tactile papillæ of the skin.

Fig. 4 represents one of these papillæ of the usual well-known form, from the anterior surface of the end of the little finger. It is represented as denuded of its epidermis, the surface of the papilla presenting slight inequalities where the lower layer of epidermic cells had rested, and its substance containing some nucleated fibres. Two nervous tubules are seen rising into it, and terminating in the oval "*Tacthörperchen*," which forms the apex of the papilla, and is imbedded in its substance.

Fig. 4.



Papilla and Corpusculum Tactûs.—After Wagner. 400 diameters.

Fig. 5.

Papillæ and Corpuscula Tactûs.—After Wagner. 400 diameters.

This body has not been isolated, and having been studied only in sections such as those we have copied from Wagner's plate, its intimate structure is not exactly known. Kölliker maintains that it is composed of a central axis, wrapped round with elastic fibres, and distinct dark striæ are certainly observed to cross it in various directions, while small corpuscles are not unfrequently among them. Wagner is quite satisfied that the nervous tubules actually enter this *corpusculum tactûs*, though the exact mode in which they terminate is undiscovered; he has not been able to find any looping of the nerves, though there are other papillæ in which looping *vessels* are easily seen (Fig. 5). It is very remarkable that capillaries and nerves do not appear to coexist in the same papilla, so that those which contain a looping vessel are destitute of a *corpusculum tactûs*, and *vice versa*. This appears to us so extraordinary as to require confirmation; but, if Wagner's account of the structure of the organ of touch prove to be accurate, an interesting addition will have been made to the physiology of the senses, even although the mode in which these rounded bodies subserve the transmission of accurate tactile impressions to the nerves may not be better understood than the precise function of the cochlear or vestibular nervous apparatus in the ear. Wagner supposes that his *corpuscula tactûs* on the surface, and the Pacinian bodies more deeply seated, absorb all the terminal filaments of the sensitive nerves, and thinks it possible that they may be connected severally with different modes of sensation; one with the appreciation of heat, for instance, and the other with touch, properly so called. At all events, that the peripheral extremities of the sensitive nerves should terminate in distinct *organs*, and not be merely lost in *tissue*, is a result which ought not to prove surprising.—*Association Journal*, Jan. 1853.

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2. *On the Glands of the Mucous Membrane of the Human Stomach.*—From the careful examination of the stomach of several suicides, Dr. A. Ecker gives the following statement concerning the gastric glands: In almost the whole of the stomach are merely simple cylindrical glands $\frac{1}{2}$ to $\frac{3}{4}'''$ long and $\frac{1}{50}'''$ thick, going in a straight line through the mucous membrane, ending in a club-like swelling, very rarely exhibiting a division of the blind end. They contain round and angular cells, of a diameter of 0.017 to 0.020^{mm} with a nucleus composed of larger granules; towards the open end are seen more developed cells, towards the blind one, more nuclei and granular matter. At the *cardiac end*, besides these simple glands, other glandular follicles are situated, the blind end of which is divided and pouched; their contents are the same as just described, except that more fat-granules are seen towards the blind end. Near the *pyloric orifice* he constantly found, besides the simple, also *acinous glands*, deciding by this against Frerichs (Wagner's *Handworterbuch*, iii. 748) and Kölliker (*Mikroscop.-Anatom.* vol. ii. pp. 139 and 149), in favour of Bischoff (*Müller's Archives*, 1838, p. 515). We observe, therefore, no abrupt change in the structure of adjacent parts of the intestinal tube, but only a gradual one, single acinous glands being situated in the mucous membrane of the œsophagus, and a larger quantity of them in the duodenum.—*British and Foreign Medico-Chirurgical Review*, January, 1853, from *Henle's and Pfeufer's Zeitschrift, f. ration. Medecin.* 1852, vol. ii.

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3. *Pacchionian Bodies.*—Self-evident though the axiom be, that makes the study of morbid anatomy dependent upon a correct knowledge of healthy parts, the instances are not infrequent in which pathological errors have been committed from mistaking a natural for an abnormal structure. Perhaps the so-called glands of Pacchioni have given rise to one of the most glaring instances of such error: first described by the above-named anatomist, in 1705, their structure, and their relations to disease of the membranes of the brain, have usually been much misunderstood; and physiological conditions having been erroneously supposed to be morbid, the natural consequence is, that what is really the result of disease has been overlooked. Professor Luschka (*Müller's Archives*, 1852, p. 101) has recently studied the Pacchionian bodies, and the following is a summary of his results:—

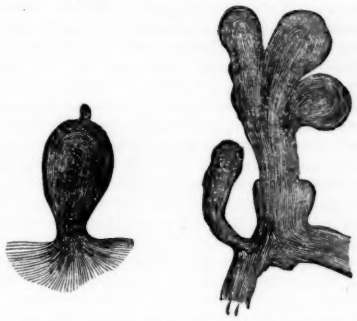
The bodies in question, which are found closely connected both with the cerebral and the parietal arachnoid, along the course of the longitudinal sinus,

held by Sœmmerring to be granules of fat, and by Rokitansky and Hyrtl to be the products of inflammatory effusion, are in reality normal, as might, *à priori*, be supposed from their being found in all persons of all ages, although they may readily be confounded with actual inflammatory exudation under or upon the free surface of the membrane.

The Pacchionian bodies are found *only* near the mesial line, and are unconnected with disease of the subjacent pia mater, which is not found to adhere more closely in their vicinity, than elsewhere, to the arachnoid, from which latter membrane the granules in question cannot be torn, and of which they are indeed regularly-formed offsets.

Pacchionian Bodies of the Cerebral Surface.—On tearing off portions of the arachnoid from the mesial edge of the cerebral hemispheres, it separates easily from the pia mater, and carries with it the Pacchionian bodies, which appear under the lens as shaggy projections of its proper substance, of various form and size, as well as of very different number in different heads. They are usually smaller and less distinct the younger the individual, their size varying from that of a poppy-seed to that of a millet-seed. Their colour is gray or whitish, and their structure usually firm and fibrous; they are covered with a scanty epithelium, and contain no vessels. The curious cactus-like forms of these bodies are seen in Figs. 1, 2.

Fig. 1. Fig. 2.



Pacchionian bodies; after Luschka. 30 diameters.

Pacchionian Bodies of the Parietal Surface.—The fibrous web of the dura mater, where it forms the longitudinal sinus, presents many irregular interstices over which the arachnoid is stretched, and into which it partly sinks. From these points, where the serous membrane is unsupported by the fibrous tissue, spring the Pacchionian bodies, presenting, as on the surface of the hemispheres, various shapes; pressing backwards through the dividing fibres of the dura mater upon the skull, and even into the canal of the sinus, and projecting forwards upon the surface of the brain, so as to come in contact with the Pacchionian bodies already described as springing from the cerebral arachnoid.

Fig. 3.

Pacchionian bodies.—After Luschka. 30 diameters.

In the young, they are usually less prominent, and of simple shape; but in some cases, especially in subjects more advanced in life, they assume very complex, and often regularly beautiful, forms (Fig. 3), and in this case they interlace so closely with those springing from the cerebral arachnoid, that, on removing the dura mater, both folds of serous membrane come away together, an occurrence often erroneously attributed to pathological adhesions.

Morbid Conditions of the Pacchionian Bodies.—The most remarkable of these is hypertrophy, observed chiefly in old persons; in consequence of which, masses

of considerable size are formed, and, pressing into the longitudinal sinuses, sometimes seriously impede the current of the blood. At other times small tumours are produced, which are often mistaken for fungus of the dura mater, and which we ourselves have once or twice noticed as the apparent cause of sudden death by their pressure on the surface of the brain, a pressure the force of which was manifested by their having formed deep pits in the skull above, all but penetrating its substance.

The Use of the Pacchionian Bodies is unknown. It can only be guessed that they may in some way protect or strengthen the veins, as these enter the longitudinal sinus, in man, the only animal in whose head the bodies in question have been detected.—*Association Journal*, Jan. 1853.

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4. *On the Reproduction of Nervous Substance, and on the Structure and Functions of the Spinal Ganglia.*—Dr. A. WALLER, after having made many experiments on different animals, principally warm-blooded ones, of an early age, and frogs, considers himself entitled to the conclusion: "That the old fibres of a divided nerve never gain anew their original structure and function, and that the reproduction of nervous substance does not take place merely in the cicatrix itself, but also downwards into the terminating ramifications. The *old* fibres gradually waste, and after a month or later, *new* fibres are formed, which are pale and transparent, possess no double contour, present a very unequal diameter, being on the one place very thin, on the other varicose, like the fibres of the spinal marrow. In the peripheral part of the glosso-pharyngeal nerve of a frog, three months after the section, their size was only about one-sixth to one-third of the original fibres; they resembled, therefore, much more the ramifications of the nerve in very young frogs. In the central part of the cut nerve the fibres remain unaltered. Concentrated acetic acid dissolves the membrane of the newly-formed fibres, leaving fusiform nuclei; the membranes of the original fibres are completely dissolved, no nuclei being left. The reproduction of fibres, and the return of function, proceed in the same proportion. Of great importance are Dr. Waller's experiments for the understanding of the *structure and function of the ganglia.* While, as he has previously shown, all motor nerves, separated from their cerebro-spinal centre, become entirely changed in their microscopic appearance, the peripheral part of the sensitive spinal nerves, the root of which is cut through between the spinal cord and the spinal ganglion, remains unaltered as long as the connection with the ganglion is maintained. Ten or twelve days after having divided one or both of the roots of the second cervical nerve, he was enabled to make the following observations: 1. That part of the sensitive nerve which is situated between the place of division and the ganglion, is disorganized in the same manner as any dissected nerve in its peripheral end. 2. Tracing the disorganized fibres into the interior of the ganglion, they are seen mixed with normal fibres; the disorganized ones appear to pass into ganglionic globules, which are likewise altered, seeming to be deprived of their contents, and to consist merely of a thin, indistinct membrane. 3. The normal fibres appear to end by very thin filaments passing into normal ganglionic globules. 4. All the fibres originating within the ganglion are in their normal state. 5. The motor fibres are completely disorganized in the whole of the peripheral part of the nerve (no motion is produced by galvanism, or any other stimulus). 6. After having divided only the posterior root, all the fibres *below* or on *the other side* of the ganglion were normal. 7. After having divided the nerve *below* the ganglion, or after having cut out the ganglion, all the fibres in the peripheral part were disorganized. It is evident from this, that the spinal ganglion acts as a nervous centre for the sensitive fibres, but not for the motor ones. Dr. W. promises to give soon more detailed observations, as well on the same subject as on the function of the nervus vagus and sympatheticus. —*British and Foreign Medico-Chirurgical Review*, January, 1853, from *Müller's Archives*, 1852, No. 4.

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5. *On the Muscles which open the Eustachian Tube.*—JOSEPH TOYNBEE, Esq., F. R. S., read an interesting paper on this subject before the Royal Society on the 17th February last. He commenced by alluding to the opinion generally held

by anatomists, viz., That the guttural orifice of the Eustachian tube is always open, and that the air in the tympanum is constantly continuous with that in the cavity of the fauces. An examination of the guttural orifice of the tube in man and other animals has led the author to conclude that, except during muscular action, this orifice is always closed, and that the tympanum forms a cavity distinct and isolated from the outer air. The muscles which open the Eustachian tube in man are the tensor and levator palati, and it is by their action, during the process of deglutition, that the tubes are ordinarily opened. That the act of swallowing is the means whereby the Eustachian tubes are opened, is shown by some experiments, of which the following may be cited: If the mouth and nose be closed during the act of swallowing the saliva, a sensation of fulness or distension arises from the air, which is slightly compressed in the fauces, passing into and distending the tympanic cavities. Upon removing the hand from the nose, it will be observed that this feeling of pressure in the ears does not disappear, but it remains until the act of deglutition is again performed, while the nose is not closed. In this experiment, the Eustachian tubes were opened during each act of deglutition; during the first act, while they were open, air was forced into the cavity of the tympanum by the contraction of the muscles of the fauces and pharynx, and the guttural orifices of the tubes remained closed until the second act of swallowing, which opened the tubes, and allowed the air to escape. That the act of deglutition opens the Eustachian tubes was inferred also from the custom usually adopted of swallowing while the descent in a diving-bell is performed; by this act the condensed air is allowed to enter the tympanum, and the sensation of pain and pressure in the ears is removed or entirely avoided. The author gives an account of the Eustachian tube and its muscles in mammalia, birds, and reptiles. In some mammalia the muscles opening the tubes appertain as in man to the palate; in others, this function is performed by the superior constrictor muscles of the pharynx. In birds, it is shown that there is a single membranous tube into which the two osseous tubes open; this membranous tube is situated between, and is intimately adherent to, the inner surface of each pterygoid muscle, and by these muscles the tube is opened. The conclusion to which the author arrives respecting the influence of the closed Eustachian tubes, is, that the function of hearing is best carried on while the tympanum is a closed cavity, and that the analogy usually cited as existing between the ordinary musical instrument the drum and the tympanum, to the effect that in each it is requisite for the air within to communicate freely with the outer air, is not correct. On the contrary, the author shows that no displacement of the air is requisite for the propagation of sonorous undulations, and that, were the Eustachian tubes constantly open, these undulations would extend into the cavity of the fauces, there to be absorbed by the thick and soft mucous membrane, instead of being confined to the tympanic cavity, the walls of which are so peculiarly well adapted to the production of resonance, in order that they may be concentrated upon the labyrinth.

In corroboration of the above views, the author states, that in cases of deafness, dependent simply upon an aperture in the membrana tympani, whereby the sonorous undulations are permitted to escape into the external meatus, the power of hearing has been greatly improved by the use of an artificial membrana tympani, made of very thin vulcanized India-rubber, or gutta-percha, which is so applied as again to render the tympanum a closed cavity.—*Med. Times and Gazette*, Feb. 26, 1853.

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6. *Specific Gravity of the Brain.*—Dr. W. H. O. Sankey has published, in the *British and Foreign Medico-Chirurgical Review* (January, 1853), the analysis of 77 observations made upon the specific gravity of the brain. These render probable the following general conclusions, viz.:—

That the mean specific gravity of the gray matter, in either sex, is 1.034; that the density of the gray matter is somewhat below the mean in the earlier and later periods of life; that the highest density is met with between the ages of 15 and 30 years in males, and between 20 and 30 years in females; that the density of the gray matter is, in a slight degree, lower in those persons

who have died after a long illness, and greater, to a slight extent, in those subjects examined before twelve hours after death than in those examined at later periods.

That the density of the gray matter may be found in a subject after death to be .006 below the mean, without any cerebral symptoms having been present during life; but when the specific gravity exceeds the mean by .006, then one of the following conditions has existed during life, viz.: either acute cerebral disease, attended with head symptoms of the gravest character, or chronic disease (in all the cases analyzed of chronic disease of the kidneys), attended either with no cerebral symptoms, or only with slight delirium.

That the mean specific gravity of the white matter after death is 1.041; that its density varies less than that of the gray matter in the sexes, or in the different periods of life; that it is much less affected by *post-mortem* changes or length of the last illness.

That in those cases in which the gravest cerebral symptoms were present during life, the density of the white matter after death may present two opposite conditions—either it may exceed the average, or it may be much below the mean.

That high specific gravity of both gray and white matter is found in conjunction with those morbid conditions of the brain connected with hyperæmia, and that a low specific gravity exists in conjunction with the opposite condition of the brain.

That no relation appears to exist between the specific gravity and the actual weight of the brain.

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7. *On the Existence of Semen in Aged Men.* By M. Duplay.—It is a long-established notion that the secretion of semen is entirely arrested in old men, and in this way their loss of procreating power is accounted for. This idea was refuted by the researches of Fischer, who found seminal fluid in abundance in the vesiculæ and testes of a man aged 94.

After the discovery of the spermatozoa, it was then concluded that the semen of old men did not contain them, and thus accounted for their impotency. Some isolated and imperfectly conducted examinations of the fluid, apparently warranted this idea. Such an opinion, however, is not compatible with the well-authenticated cases, and too numerous to be false, of the procreating power of old men. Wishing to arrive at more positive and authentic data, M. Duplay examined the fluid contained in the seminal apparatus in 51 aged subjects. Apart from the consistence, colour, and other less important properties, in 37 cases spermatozoa were found, which, in 27 cases, were perfectly formed, the head large, tail long, and curved; in a word, not differing from that of the adult, and in some instances as abundant.

Amongst these 37 examined, 8 were sixty years old; 20, seventy; and 9, eighty. Also in the 7, where the spermatozoa were as numerous as in the adult, the minimum age was seventy-three, and the maximum eighty-two. In these subjects, 21 died of acute and 16 of chronic affections, giving rise to that wasted condition which, according to some observers, causes their disappearance in the adult.

Nevertheless, if this secretion possesses, occasionally, at this age, the same power and regularity in its effects as at an earlier period of life, it is not always so; for M. Duplay could not find any spermatozoa in 14 of the cases examined; also, in some, there was a remarkable modification in their structure, abundance, or seat. The tail or head was occasionally deformed, some having a very short tail, others having virtually no head. Small crystalline masses were also seen, but their nature could not be determined.

As to the quantity, the writer observed that, in 14 cases, though the spermatozoa were fully formed, they were very few in number; a few only being visible, isolated, in the midst of a liquid, containing little granules and the debris of epithelial scales.

As to their seat, the animalcules were found in 26 along the whole extent of the spermatic apparatus; in 3, the semen in the vas deferens alone contained them; that of the vesiculæ contained none; in 1, they were found in the vesi-

culæ, and not in the vas deferens; and in 7, in the vesicula of one side, and not in the vasa deferentia.

These remarks are not only interesting, as being scientifically curious, but deduce some corollaries of use in a hygienic point of view. Thus, if old men become less apt for reproduction, it is not exclusively in the composition of their semen that the cause is to be sought for, but in some modification of the other acts necessary to this function. It may also be added, that if the semen continues to be secreted in the aged, it must have its use; but since, physiologically speaking, nothing then stimulates its evacuation, for the purpose of reproduction, may it not be concluded that it is destined to be reabsorbed, and thus, by its stimulating influence tend, in a certain degree, to keep up the vital force. This conclusion is supported by the researches of M. Gosselin, as to the existence of the same secretion in obliteration of the spermatic canals. It is proper to show the dangers which artificial ejaculations give rise to at this age, notwithstanding the abeyance and providential passiveness of those organs, to which the name of excitors may be given.—*Dublin Medical Press*, February 16, 1853, from *Gazette Médicale de Paris.*

MATERIA MEDICA AND PHARMACY.

8. *Action of Liquor Potassæ on the Urine in Health.*—Prof. E. H. Parkes, M. D., in an interesting paper published in the *British and Foreign Medico-Chirurgical Review* (January, 1853), records some observations instituted to determine the effect of liquor potassæ on the urine of a healthy individual preliminary to a similar inquiry into its action on the urine of diseased persons. The following is his recapitulation of the results which he has obtained:—

If liquor potassæ be taken soon after meals, its action is that of an antacid. It combines with hydrochloric or with lactic acid, and then, doubtless, passes into the circulation. What appreciable effect it now produces is not indicated in the tables above given, but it does not increase either the water, solids, or sulphuric acid of the urine. If the liquor potassæ be taken into an empty stomach, it passes unneutralized into the circulation, and probably through the veins; in so doing, it must produce an effect on the walls of the capillaries and small veins, but the extent of this cannot be known. As much as ʒij have been taken with only 4 ozs. of water, without causing epigastric pain or uneasiness (although it produced considerable temporary scalding of the mouth and throat), and without apparently producing any local effects in the stomach. In, usually, from thirty to ninety minutes after its entrance into the circulation,[1] an increased flow of slightly acid urine occurs, which contains the whole of the potash, organic matter differing considerably from that of ordinary urine, and a relatively large proportion of sulphuric acid; the phosphoric acid and the chlorine are less changed. Perhaps an organic acid (not uric, and probably not hippuric) is also present. The explanation of these facts is, that an albuminous compound, either in the blood itself or in the textures, has become oxidized; its sulphur, under the form of sulphuric acid, has united with potash, and, with possibly the changed protein-compound, is poured out from the kidneys. This oxidizing effect of the liquor potassæ is no doubt assisted by exercise, and by copious draughts of water; but in the above experiments, exercise and fluid were abstained from, in order not to complicate the results. The amount of albumen or fibrine destroyed by one drachm of liquor potassæ cannot

[1] This does not sufficiently appear from the facts in the text. I subjoin some particulars of another experiment, made when the system was not quite in a state of health. At a quarter past 4, liq. potassæ ʒj, water ʒiv, was taken.

At a quarter to 5, ʒij, ʒvj were passed . . = ʒv, ʒij per hour.
At a quarter past 5, ʒiv, ʒvij were passed . = ʒix, ʒvj per hour.
At a quarter to 6, ʒj, ʒij were passed . . = ʒij, ʒiv per hour.

be considerable, but if the potash were continued in large quantities, oxidation could probably be pushed to any amount. The nitrate and acetate of potash did not in a *healthy system* have the same effects.

After the increased flow of urine, the quantity passed per hour falls slightly below the standard. It appears to resume its ordinary composition, but its exact condition at this period has not been determined. Some observations on urine in disease would lead me to infer that the uric acid will be found to be increased.

Such were the effects of liquor potassæ on the urine. The effect produced on other excretions was not obvious. The skin and the intestines appeared quite unaffected, and as all the potash was found in the urine, the reason of this is easily understood. In most of the experiments there were no subjective symptoms of any kind. On two occasions, there was rather sharp frontal headache, languor, depression, slight lumbar pain, and aching of the legs, after the large flow of urine. On the night of the 15th, when the flow of the urine, which was proceeding at the rate of ℥iss per hour, was augmented in two and a half hours by ℥xiv, and no fluid was supplied to the system, the pulse became perceptibly small (almost thready) and slow; it remained equal and regular—there was no thirst, no shivering, and no nausea; the skin was dry and warm. In six hours the pulse had quite regained its force and frequency, and the other symptoms had disappeared without any fluid having been taken.

After the experiments were concluded, the general health did not appear impaired; it was, if anything, better than usual.

The effect of liquor potassæ on the diseased system is a much more difficult problem. The chemical conditions are not the same, and the effects of the potash are necessarily influenced by them. I will not now enter into this subject, but observe that it is necessary, when its oxidizing effects are desired, to give the potash eight or ten hours after food, to drink moderate quantities of water, and, if possible, to use exercise. The potash should be given pure, or with large doses of iodide of potassium, but unmixed with sugar. I may so far anticipate what will be hereafter said on this point, by stating that, administered in this way, it exerts a powerful effect on the exudations of inflammations, but appears less useful in the early stages, when an antagonistic force seems to be in action.

It remains to be seen whether the varying excretion of sulphuric acid, which is unaccounted for by diet and exercise, is occasioned by greater or less alkalinity of the blood producing variations in the amount of oxidation of the albuminous compounds.

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9. *Action of Anthelmintics.*—Dr. Kuchenmeister, of Zittau, has examined the various vermifuges, by immersing the living intestinal worms of fowls, cats, and dogs, in albumen, at a temperature exceeding 77° Fahr., and adding the anthelmintics in the form of infusion or of powder. In some cases, a mixture of warm milk and water was substituted for the albumen. The experiments were not continued for more than from forty to forty-eight hours, if the worm had not been killed before the expiration of that time. Dr. Kuchenmeister made use of electricity as the most delicate reagent for proving the occurrence of the death of the worms. In the first place, electricity cannot be considered as a vermifuge. The author subjected a female *heterakis vesicularis*, taken from a partridge that had been killed, to the action of a rotatory apparatus, which was kept up with longer or shorter intervals during an entire day. The animal was not destroyed by the experiment. He next tried the remedies employed for the removal of tæniæ, and first tested kousso in the following manner: A living *tænia crassicolis*, procured from a cat, was placed at four o'clock in a mixture of albumen and dolichos pruriens. The worm appeared to be perfectly well in this mixture, and at two o'clock on the following afternoon exhibited the most vigorous movements. The tænia was now transferred to a vessel containing a mixture of infusion of kousso and some of the infused as well as some of the fresh powder with albumen. The temperature of the mixture was 30° R. (99.5° F.) On its introduction, the worm quickly extended itself; after some time it was found to be dead, its colour having changed to a dirty reddish-

yellow. Two *tæniæ serratæ* were placed at about half-past one in the afternoon in a mixture of albumen and kousso; at two o'clock they were dying, and at three completely dead. Two *tæniæ serratæ* from the same dog were brought in contact with kousso and milk at half-past one in the afternoon, and at two o'clock were dead. Two *tæniæ serratæ* were placed at half-past one in the afternoon in albumen, mixed with decoction of pomegranate root and with some of the powdered root; they died in three hours. Two others were placed in milk mixed with the decoction only; they died in three and a half hours. A *tænia crassicolis* was put into a mixture of albumen with ethereal extract of male fern; it died gradually in three hours and three-quarters. A number of *tænia cucumerinæ* were placed in a mixture of albumen and oil of turpentine; they were dead in an hour and a quarter.

A number of the same were put into a mixture of albumen and castor-oil; they appeared lively at first, but were dead in seven hours. Similar worms were put into a salad, composed of pieces of unwatered herring, boiled potatoes, large pieces of onion and garlic, albumen, vinegar, and a large quantity of oil. They died in eight hours. Lastly, the author tested the vermifuge powers of the brown oxide of copper; fifteen grains were administered in the course of four days to a strong cat. When the body was opened, the entire intestinal canal was found to be full of fluid, yellow, flaky feces; the intestine was softened, and denuded of epithelium, especially at the termination of the ileum, where the adjoining Peyer's glands were much swollen, particularly in two situations, one of which was an inch and a half long by one-third of an inch broad; the other was nearly circular, and its diameter one-third of an inch. The cat had been purged. The tænia and ascarides it contained were lively. It would hence appear that this substance is both inefficacious as a vermifuge and dangerous to the system. The following table contains the results of the above experiments:—

In milk boiled with kousso, tænia died in half an hour.	
In a mixture of oil of turpentine and albumen, in . .	1 to 1¼ hour.
In decoction of kousso with albumen	1½ " 3 hours.
In decoction of pomegranate root with milk . . .	3 " 3½ "
In decoction of pomegranate root with albumen . .	3 "
In ethereal extract of male fern with albumen . .	3½ " 4 "
In castor-oil with albumen	8 "
In salmagundi with garlic and onions	8 "

Kousso would therefore seem to be the most efficacious remedy against tænia. When pomegranate bark and male fern root fail, their failure may be owing to the habit of administering a laxative in from four to six hours after the exhibition of the vermifuge, by which the latter may be carried beyond the worm. With regard to pomegranate root, it must be observed, that in large doses it occasions diarrhœa. The same remark applies to castor-oil. The author also alludes to cold water, strawberries, dolichos pruriens, and filings of tin. When tænia are placed in water containing ice, they are instantly benumbed, and if allowed to remain in it, they will always be found at the end of ten hours to be quite dead. Strawberries may be useful as a mild remedy in cases of tapeworm; if large quantities of them be taken on an empty stomach, entire portions of the worm will often be passed. Dolichos pruriens, with which the author tried many experiments, appears to possess no power of destroying worms. The author has also minutely studied the medicines recommended for the removal of round worms. In albumen, these worms behave as the tænia; in water, at about 77° F., they live for some days, but swell, stiffen, become longer, thicker, and more sluggish; they lose their power of suction, and their motions become slow and only partial; they resemble leeches which have gorged themselves. In general, however, the males and young neutrals resist the effects of water longer than the mature, impregnated, egg-bearing females, which become quite rigid and inflexible, and swell considerably. Milk and whey affect the worms like water. The following are the medicines, the effects of which were tested:—

1. Camphor. An ascaris lived from eighteen to twenty hours in albumen

into which some camphor had been introduced. 2. A mixture of oil of turpentine and albumen killed some ascarides which were placed in it in from two and a half to six hours. 3. Ascarides lived forty hours in albumen and wormseed, whether the latter was employed in the form of powder or infusion. 4. Some ascarides were placed in albumen mixed with santonine; they did not die in it, nor did they die in a watery infusion of santonine. When santonine was dissolved in oil, especially in castor-oil, and mixed with albumen and ascarides, the latter died in ten minutes. An injection of santonine and castor-oil was thrown up the rectum of a cat, and produced numerous motions containing dead worms; and on killing the cat, the entire of the lower portion of the intestinal canal was ascertained to be free from worms, while four were found near the stomach quite rigid and extended, and retaining but little life. A *tænia crassicolis*, however, was found in the intestines, and appeared to be quite uninjured and very lively. 5. A mixture of albumen and aniseed, with a strong infusion of the latter, killed the worms in about twenty-four hours. 6. Parsley, mixed with albumen, killed ascarides very slowly. 7. Flour of mustard and albumen destroyed them in about four hours. 8. In rue, the worms lived upwards of twenty-four hours. 9. The same was the case with millefoil. In contact with tansy, valerian, and chamomile, great numbers of them lived for twenty-four hours. With onions and garlic they perished in from ten to fifteen hours. A decoction of cloves, with or without albumen, killed them in twelve hours. In an infusion of ginger, with or without albumen, they lived about twenty-four hours. Petroleum, mixed with albumen, killed them in less than six hours, as did also oil of cajeput and albumen.

A series of vermifuges, taken from the class of balsamics, was tried in like manner, namely, assafetida, ammoniacum, balsam of Peru, extract of juniper, and Venice turpentine. In all these the worms lived more than twenty-four hours. Of the class of empyreumatics (brenzlichen stoffe), the following were tried: Oleum chaberti [a mixture of four parts of oil of turpentine, and one of the animal oil of Dippel], oil of amber, castor-oil, tar-water, creosote, wood-vinegar, and wood-soot. In these, for the most part, the worms lived from twenty-four to forty-eight hours, except the wood-vinegar, in which they lived rather more than twelve; and creosote, in which they died within two hours. Of bitters, the author tried aloes, gamboge, ox-gall, wormwood, myrrh, gentian, quassia, hops, bitter orange, and acorus calamus; in all these the ascarides lived from twenty-four to forty hours. Of astringents, pure tannic acid, pomegranate root, kousso, extract of walnuts, cinchona bark and quina, elm bark, willow bark, the flowers and stalks of meadow-sweet, oak bark, dragon's-blood, catechu, and kino. In these, the worms died in from twenty-four to thirty hours, with but two exceptions, namely, tincture of galls and pomegranate root, both of which killed them in the space of eleven hours. Of saline preparations, sulphate of soda, chloride of sodium, and the roe of the herring, were tried. In the first, the worms died in from fifteen to eighteen hours; in the second, in from two to six; and in the roe of the herring, in four hours. The following metallic poisons were experimented on: Arsenic, calomel, corrosive sublimate, and the salts of tin, of lead, and of copper. Corrosive sublimate alone destroyed the worms in so short a time as two hours; all the other metallic salts required a much longer period. From these experiments it would appear that santonine, mixed with oil, is a most powerful vermifuge, then chloride of sodium, the roe of the herring, garlic, onions, &c. The author advises that santonine should be given as a vermifuge; mixed with oil, in the proportion of from two to five grains to an ounce of castor-oil. This solution should be given in the doses of a teaspoonful until the effect is produced. As auxiliary treatment, chloride of sodium, herring-brine, mustard, onions, and garlic, may be employed.—*Dublin Quarterly Journal*, February, 1853, from *Froriep's Tagsberichte über die Fortschritte der Naturund Heilkunde.*

10. *Tincture of Mastic as a Hæmostatic.*—It is stated in a recent number of *Schmidt's Jahrbucher*, that Dr. Frankl has found the tincture of mastic an excellent hæmostatic. He employs it in epistaxis, and in troublesome bleeding from leech-bites. It is applied to the points whence the blood issues, by means

of a camel's-hair pencil. Terzer, a dentist of Vienna, is also reported to have used it successfully in hemorrhage following the extraction of teeth.—*Association Medical Journal*, Jan. 14, 1853.

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11. *Hyposulphite of Soda and Silver as an occasional Substitute for Nitrate of Silver.*—Dr. J. Delioux, of Cherbourg, brings the hyposulphite of soda and silver under notice, as a therapeutic agent, in the *Bulletin Générale de Thérapeutique* for October 15 and November 15, 1852. He prepares it by pouring a solution of hyposulphite of soda on oxide of silver, recently precipitated by potassa, until it is completely dissolved. On evaporation, minute crystals of hyposulphite of soda and silver are left. The salt appears as a grayish-white crystalline powder, of sweetish taste, leaving a slightly styptic flavour; it is very soluble in water, but insoluble in alcohol. It becomes black on long exposure to light, but preserves its colour indefinitely when kept in bottles of coloured glass, or covered with paper. The solution becomes black when exposed to diffused light, but much more slowly than that of the nitrate of silver. When pure, it does not discolour the epidermis or linen. Its power of coagulating albumen, and hence its astringency, is small compared with that of the nitrate, and its local action is less irritating.

From various experiments, Dr. Delioux concludes: First, that for external use, the hyposulphite of soda and silver may be employed in larger doses than the nitrate of silver; and that in these doses it is much less irritant, and incapable of producing a true eschar: Secondly, that for internal use, if it is sufficiently diluted, there is no risk of injuring the mucous membrane of the stomach. Moreover, as its solution does not coagulate albumen, nor form a precipitate of chloride of silver, it will be readily absorbed by the veins of the stomach.

Dr. Delioux has had an opportunity of administering the salt in only one case of epilepsy. Here it was unsuccessful as far as the epilepsy was concerned; but it produced no blackening of the skin, or any physiological disturbance beyond excessive hunger. But the author very justly points out that no inference can be drawn from a single case. He gradually increased the daily dose from 5 to 60 centigrammes (¾ of a grain to 9 grains).

As an external application, Dr. Delioux uses the hyposulphite as a substitute for nitrate of silver, in cases where a local alterative is required which shall produce less irritation, and act chemically on the tissues less than the latter salt. It should be tried in obstinate ulcers, as an injection into purulent collections and into sinuses, in chronic fluxes of the external ear and of the nasal fossæ, and as a collyrium in diseases of the eye. Among the latter, Dr. Delioux can only cite from experience cases of acute conjunctivitis, which he has often found benefited, after the inflammatory stage has passed, by a dilute solution of this salt.

Dr. Delioux has employed the hyposulphite of soda and silver most frequently in acute and chronic urethritis; and here he has found it most efficacious, especially in chronic cases, and at the end of the acute stage. He does not set it forth as a specific, nor as pre-eminent among local remedies; but as one to which recourse may be had among others. He generally uses an injection of from 50 centigrammes to a gramme (7½ to 15 grains) of the salt in 100 grammes (about three ounces) of distilled water. It produces little or no pain, and does not act as an astringent.—*Association Medical Journal*, Jan. 14, 1853.

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12. *New Mode of Applying Leeches.*—Dr. Sloan states (*Monthly Journal of Medical Science*, Aug. 1852) that he has hit upon a plan by which very indifferent leeches may be rendered most efficient bloodsuckers.

"The idea," he says, "first occurred to me some years ago, while waiting the effect of a dozen, which were remaining attached to the skin, but scarcely drawing blood.

"It struck me that, as leeches are remarkably influenced by atmospheric changes, it might be worth while trying the experiment of partially exhausting the air over them, and thus inducing the sensation of a low barometer. On covering them with a cupping-glass, and by means of the air-pump producing

a moderate degree of rarefaction, an immediate change in the style of sucking took place; the leeches displayed an activity I have rarely seen equalled by those of the best quality when applied in the usual way; they rapidly became fully distended, and fell off. By continuing the exhausting process afterwards, which is a common enough practice, a sufficient quantity of blood was readily obtained; and I remarked that the erysipelatous appearance, which usually followed leech-bites, in this patient was prevented.

"It is quite possible that the increased activity under the exhausted cupping-glass may arise from the skin being rendered more vascular, and thus yielding its blood more readily; or we may even view the leech in these circumstances as an elastic sac, communicating with the circulation by a firm canula, so that the blood may flow into the animal without much exertion on its part; but, whatever the cause, the result will be found satisfactory. I have never had occasion to try the effect of snipping off the tails of the animals under this plan, but possibly it would be eminently successful.

"The operation is almost as quickly performed as cupping, and has this advantage, that it requires no dexterity. I think any nurse of ordinary intelligence might acquire the necessary skill in a single lesson.

"In charitable institutions, this plan would be especially advisable, as by it two leeches might be made, on the average, to do the work of three, thereby effecting a considerable saving, and the necessary apparatus would always be at hand. Nothing could be better for the purpose than those cupping instruments in which the vacuum is produced by an air-pump. Increasing the vascularity of the skin by a cupping-glass previous to applying the leeches, seems to make them bite more readily, probably by rendering the odour of the blood more perceptible."

MEDICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL MEDICINE.

13. *General Pathology and Treatment of Dyspepsia.* By Prof. J. H. Bennett.—By dyspepsia (from δυσπεπτω, to digest with difficulty), is generally understood, all those functional derangements of the stomach which are primary in their origin, that is, not dependent upon, or symptomatic of, inflammation or other disease in the economy. Such a disordered condition is exceedingly common, and often constitutes the despair of the physician, arising, as it frequently does, from causes which are often obscure, or, if discovered, are beyond his control. This will become apparent by considering, in the first place, those circumstances which require to be united to secure a healthy digestion. These are—1st. A proper quantity and quality of the ingesta. 2d. Sufficient mastication and insalivation. 3d. Active contractility in the muscular coat of the stomach. 4th. Proper quantity and quality of the gastric, biliary, and pancreatic fluids. 5th. A consecutive and harmonious action of the intestinal canal. Dyspepsia, or indigestion, may be produced by any cause which occasions derangement of one or more of these conditions; and hence why so many different circumstances may produce somewhat similar symptoms, and why so many different remedies have been found effectual in various cases. Notwithstanding that you will frequently meet with instances which baffle all preconceived rules, there can be no doubt that a careful attention to the essential physiological conditions above enumerated will, in the great majority of cases, conduct you to a successful rational treatment. Thus—

1. Of all the causes of dyspepsia, excesses in eating and drinking are the most common. An over-distended stomach, or too rich a meal, not unfrequently induces a feeling of weight or fulness in the epigastrium, nausea and eructation of acid, bilious or gaseous matters, with a loaded tongue, headache, and other general symptoms. This is acute dyspepsia, or the *embarras gastrique* of the French. Occasionally, there is more or less vomiting of bilious

matter, when the attack is vulgarly called a *bilious seizure*. If called into such a case, immediately on its occurrence, and before the ingesta have left the stomach, as determined by the sense of load at the epigastrium, an emetic should be given; but if vomiting be present, it should be assisted by warm diluents. As soon as the stomach is quieted, or, if you have been called in at a late period, when the ingesta have passed into the intestines, a purgative pill should be administered, consisting of four grains of calomel, with four of compound extract of colocynth, followed in a few hours by a purgative draught of salts and senna. If necessary, an enema may also be given. The purging, with a day or two's confinement to farinaceous food, will generally get rid of such an attack; but their frequent repetition leads to the chronic form of dyspepsia, when careful regulation of the diet, with exercise, must constitute the chief treatment. Hence the advantage of what is called "change of air," and much of the benefit which is derived from watering-places. Chronic dyspepsia, however, is far more commonly caused by excess of spirituous and vinous drinks, than by eating, when abandonment of the evil habit is a *sine qua non* in the treatment. Tea-drinkers are very liable to the disease, and its frequency among female servants is probably owing to this cause.

2. It may frequently be noticed, that those who have acquired the habit of eating rapidly are more or less dyspeptic. I knew a journeyman printer who was much tormented with indigestion, but who was cured by changing his residence. The cause of this was for some time a mystery, but on again changing his house the disease returned, although no apparent cause could be discovered. I ascertained, however, that it depended not on the locality *per se*, but on its distance from the printing-house. When far off, he eat his dinner with his family rapidly, having only just time enough to walk home and back within the hour. When he lived near, the time otherwise spent in walking was occupied in eating, or in cheerful converse with his wife and family. Since I made this observation, it has often occurred to me that the distant residence of artisans from their place of employment may be the occasional cause of the dyspeptic symptoms they frequently possess. With regard to the exact object of the saliva in the process of digestion, whether it be to convert the farinaceous compounds of the food into glucose, or, by its viscidity, to mix up air with the portions swallowed, is not positively determined; but its necessity for the digestion of man is shown by cases where the under lip has been lost by accident or disease, and where salivary fistulæ have formed, in which dyspepsia is generally present, and in which the disordered digestion has been cured by operations that, by restoring the parts to their normal condition, prevent the escape of saliva. Again, persons habituated to the dirty habit of spitting, are for the most part dyspeptic; and it has been asserted that the pale countenances of the inhabitants of the United States, and the leanness of their persons, are owing to this cause. In all cases where dyspepsia can be traced to this source, the treatment must be obvious.

3. The contractile movements of the stomach, which, by kneading the ingesta, and keeping them in constant motion, secures an intimate admixture with the gastric juice, and the rapid transference to the duodenum of such portions of it as are transformed into chyme, are evidently of immense importance to a proper performance of digestion. The experiments of physiologists have shown that digestion in gastric juice out of the stomach is much slower than in it, and that section of the pneumogastric nerves, by arresting the contractile movements, only permits the circumference of the mass in contact with the secreting surface to be digested. These facts at once explain the well-known influence of mental emotions upon the stomach. Contentment and hope are as favourable, as dissatisfaction and despondency are opposed to, good digestion. Nothing is more common than dyspepsia among literary men who overtask the mental faculties; among young persons of very excitable minds; and among individuals of a melancholy temperament, hypochondriacs, etc. etc. It is in such cases that cheerful society, active and appropriate occupations, change of scene, removal from mercantile or literary employments, different trains of thought, and so on, are beneficial. Hence also many of the good effects of travel, visiting watering-places, etc etc.

4. Our knowledge with regard to the offices performed by the gastric, biliary, and pancreatic juices in digestion has of late years been much advanced. Thus, the gastric juice more especially operates on the albuminous, and the pancreatic juice on the fatty compounds of the food. The function of the bile is perhaps more obscure, although it probably acts as a means of precipitating or separating some of the excretory matters from chyme, and so facilitates assimilation of the nutritive portions. Digestion may be deranged by all those causes which too much increase or diminish the secretion of these three fluids. Thus excess of acidity in the stomach is one of the most common causes of dyspepsia, producing that form of it which accompanies scrofulous and tubercular diseases. It may be in such excess as to neutralize the alkaline action of the pancreatic juice, and render it difficult or impossible to emulsionize fatty matters. In such cases, alkalies, with bitter tonics and the direct introduction of animal oils in excess, are indicated. On the other hand, the gastric juice may be diminished in quantity, as frequently occurs in persons who suddenly overtask the powers of the stomach at feasts, or in old persons with feeble digestion. The sense of load after eating is generally indicative of slow digestion from this cause. In acute cases, a stimulant rouses the stomach to increased action, and hence the moderate use of drams and generous wines after dinner is occasionally useful. In old persons, the sense of load and feebleness is best removed by giving up tea, and drinking at night a little weak brandy and water. In chronic cases, acids are indicated, especially muriatic acid. The tr. ferri co. of the pharmacopœia, is a useful preparation in chlorotic females. We have no distinct means, as far as I am aware, of rousing the pancreas into action, and yet many cases are on record in which fatty matters have passed undigested through the alimentary canal in consequence of obstruction to the pancreatic duct. In such cases, and all those in which fatty matters are difficult to digest, alkalies, especially the liquor potassæ, with vegetable tonics, are indicated. When the bile is deficient, constipation and dyspepsia are usual results, and are to be relieved by gentle mercurial purgatives, with extract of taraxacum, and by remedies such as rhubarb, and especially the compound rhubarb pill, which, by acting on the duodenum, also favour the flow of bile into the upper part of the alimentary canal. Dr. Clay, of Manchester, has recommended in such cases the administration of ox-gall, a remedy, which, although not extensively given, is evidently rational, and calculated by its purgative action to be highly serviceable. Excess of bile, on the other hand, ought to be treated by drastic purgatives, diuretics and diaphoretics, according to circumstances, to cause excess of excretion. Exercise should also be insisted on to call the lungs into action, and thus relieve the liver in its office of separating hydrocarbon.

5. A derangement of the consecutive and harmonious action of the alimentary canal is another frequent cause of dyspepsia; for it is as necessary that those portions of the food which are not assimilable should be removed out of the economy, as that the nutritive materials should be absorbed. Hence, whatever impedes the contractility of the intestinal canal, whatever alters the structure of its mucous membrane, or whatever mechanically obstructs its caliber, may always be observed to induce dyspeptic symptoms. The removal of these various conditions, whether by stimulating the nervous centres, by appropriate diet, or by purgatives and astringents, as they may be required, need not be more particularly dwelt upon.

In many cases of dyspepsia, two or more of these classes of causes may be combined, so as to render the indications for treatment complex and apparently contradictory. In other cases, one or more causes may exist, although from the indications presented they cannot be determined, when our treatment must always be more or less vague and unsatisfactory. Lastly, there are a few instances where dyspepsia can only be explained by *idosyncrasy*, in which we find this or that particular article of diet to derange the digestive functions, and in which avoidance of the offending cause is the only plan that is attended with success.

In addition to the different kinds of dyspepsias to which I have directed your attention, it is practically important to keep in remembrance the leading

symptoms which may be present, and the remedies by which they may be removed. These are anorexia, acid eructations, sense of load in the stomach, cardialgia, vomiting, flatulence, palpitations of the heart, and cephalalgia. Some persons talk of a stomach cough, which, however, is more commonly dependent on irritations in the œsophagus or pharynx, which have hitherto been overlooked. I have already alluded to the mode of treating most of these symptoms. Palpitations of the heart often occasion alarm in young dyspeptic persons, and in addition to remedies directed towards the stomach, change of scene, removing attention from the affected organ, and varied reading should be enjoined. The sense of load in the stomach is most frequently removed, as we have previously said, by acids, whilst acid eructations and cardialgia are best relieved by alkalies and bitter tonics. Vomiting and flatulence are often very troublesome symptoms, and the varied remedies which may be employed in a case of chronic vomiting may be gathered from the following history:—

Case.—*Dyspepsia—Vomiting of Fermented Matter containing Sarcinæ.*—Thomas Spence, æt. 53, a weaver. Admitted September 6, 1852. He states that, for fourteen or fifteen years past, he has been subject to occasional vomiting, which generally occurred on Sundays, owing, he supposes, to want of exercise at his usual employment. On these days he scarcely ever took his meals from fear of the almost certain vomiting which would follow. For two or three years past he has been liable to frequent heartburn, water-brash, and acid eructations, but was able to continue at his usual employment till about six months ago. Since then, he has been gradually losing his appetite, and his strength has become much prostrated. He has never vomited blood or any dark-coloured matter, and has never passed any such by stool. On admission, tongue clean; no difficulty in deglutition; appetite capricious, but always best in the morning and early part of the day. Shortly after taking food, he begins to have uneasy sensations in the epigastrium, sickness, and a sense of weight at the stomach. When these symptoms appear, the abdomen generally begins to swell, and in about an hour to an hour and a half, the food is frequently vomited. The rejected matters consist generally of the half-digested food, with a thick, dirty, frothy scum on the surface, resembling yeast. He has also frequent pyrosis, acid eructations, and flatulence, the latter sometimes so great as to occasion a sensation of choking, especially after vomiting. These symptoms are worse after some kinds of food than others: oatmeal, especially in the form of porridge, produces them in the severest form; broths, vegetables, or any kind of slops, do not agree with him; animal food suits him best, but when even this is taken for any length of time, the symptoms soon reappear. The abdomen at present is much swollen, very tense, and tympanitic on percussion, with considerable tenderness over the epigastrium. The bowels are generally constipated; the stools usually of a dark colour and hard consistence. He has occasionally slight pain and difficulty in voiding his urine, which is slightly phosphatic. Other functions are normal.

On taking charge of this patient on the 1st of November, I found him vomiting from time to time large quantities of fluid mixed with undigested matters, on which there gathered, after a short time, a thick brownish scum, exactly resembling yeast. On examining this scum with the microscope, it was ascertained to contain a large number of sarcinæ ventriculi, mingled with starch corpuscles, more or less broken down, and granular matter. From the ward-books, I learned that his treatment had consisted in the successive administration of—1. The local application of leeches; 2. Of the sulphite of soda, in scruple doses, with two grains of aromatic powder three times a day; 3. Of half a grain of protochloride of mercury at night; 4th. Of a scruple of the sulphite of soda every three hours, which was subsequently increased to half a drachm; 5. Of creosote mixture; 6. Of a naphtha mixture; 7. Of bismuth and aromatic powders; and 8. Of pills of calomel and opium. These different kinds of treatment, some of which, especially that of the sulphite of soda, had been continued for several weeks without intermission, seemed to have produced no good effect.—November 11. During the last four days, he has vomited every night, four hours after dinner, that is, about 6 P. M.

The ejected matter presents the same yeast-like character formerly described; but the sarcinæ, though still abundant, are not so numerous. He complains of a great sense of distension, and a feeling of "working" or "bubbling" in the stomach shortly before vomiting. ℞. Acid. hydrocyan. dil. M. xviii; Syrup. aurant. ℥j; Aquæ ℥ii; M., half an oz. three times a day.—November 20. The hydrocyanic acid checked the vomiting till last night, when it returned with more violence than ever.—November 24. Vomiting still continues regularly every day. Omittantur mist. acid. hydrocyan. ℞. Liquor potas. ℥ss; Aquæ ℥vss. Two tablespoonsful to be taken every four hours.—December 2. Alkaline mixture again checked the vomiting, which, however, returned last night to a slight degree. Applicet vesicat. 4 x. 5 Epigastrio.—December 8. Vomiting has once more returned daily since last report. ℞. Tinct. ferri muriat. ℥j. Sumat ℥ss *ter in die ex aqua.*—December 16. The vomiting has been again checked, but once more returned in a slight degree at 1 o'clock this morning. The matter ejected exhibits very little of the usual frothy scum, but consists of a brown liquid-like coffee, with a few shreds of undigested food. It is of intensely acid reaction, and contains only a few sarcinæ. The dose of the acid tincture has been reduced to M. xv. The diet during this period has been principally animal, porridge and vegetables invariably increasing his complaint. To-day he left the hospital to visit his friends in the country, expressing himself as greatly relieved.

Commentary.—The kind of chronic vomiting and dyspepsia which is above described has been long known in Scotland, and was described by Cullen as a form of pyrosis. It has been supposed to be associated with the habit of largely consuming oatmeal as a principal part of the diet, although its real pathology was unknown. In 1843, Mr. Goodsir discovered in the ejected matter from the stomach, in a case of this kind, organized forms, which, from their resembling a woolpack, he denominated *sarcina.* He considered that they were of a vegetable nature, and by multiplying fissiparously, communicated to the contents of the stomach the appearance of yeast, which is also known to be dependent on the development and growth of vegetable structures. This occurrence in the stomach of course explains their frequent presence in the feces, although, whether they ever are developed in the intestines is unknown. On one occasion, however, I have seen them in the urine, which occurred in the case of a gentleman under the care of Dr. Mackay, of this city. The sarcinæ vesicæ were in that case uniformly smaller in size than the sarcinæ ventriculi. They have also been discovered in an abscess of the lung by Virchow. The exact mode of formation and origin of these structures are unknown; but little doubt can exist that their presence is the real cause of the chronic vomiting and other symptoms of the individuals affected, and that the cure will depend on such means as are capable of insuring their destruction and preventing their return. It must be obvious, however, that the same means which destroy or check vegetable growth on the surface of the body (see Favus), are not applicable to the mucous lining of the stomach. Besides, we are ignorant whether these parasites grow in an exudation poured out on the mucous membrane, or are developed only in a fluid. Again, it is very possible that once introduced from without, the conditions necessary for their development may be dependent on some kinds of ingesta, a view which derives support from the facts observed in the case before us, namely, that they were always increased by farinaceous kinds of food. On all these points, however, we are as yet ignorant, and our efforts at cure hitherto have not so much been directed to cutting off the sources of growth, as to destroying it after it has proceeded to a certain extent. With this view it has been imagined that the sulphite of soda would destroy them, by causing, on its union with the gastric juice, the extrication of sulphurous acid, which is so destructive to vegetable life. This remedy has consequently been given, and, it is said, with success; but in the present case it was of no benefit. Subsequently, a variety of medicines were given, several of which succeeded in checking the vomiting for a time. Indeed, it was remarked that the mere circumstance of changing the medicine was sufficient to stop the vomiting for several days, when it returned and continued as before. Of all the numerous remedies tried, the tr. ferri

muriatis seems to have done most good.—*Clinical Lectures in Monthly Journal of Medical Science*, February, 1853.

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14. *Pathology of Rheumatism and Gout.* By Professor J. H. Bennett.—The present theory with regard to these affections is, that they are both connected with an increase of lithic acid in the blood. In rheumatism, this is dependent on excess of the secondary, and in gout, on excess of the primary, digestion. In rheumatism, however, there is considerable excretion of lactic acid by the skin (Todd), whilst in gout there is an excess of soda, which, uniting with the lithic acid, produces a compound of lithate of soda, that may be detected as such in the blood (Garrod), while sometimes it exudes into the cellular tissue of the skin, constituting tophaceous deposits. In both diseases, there is an undue balance between the excess of lithic acid and the power of excretion—in rheumatism by the skin, and in gout by the kidney. This pathology serves to explain the similitudes and differences existing between the two affections. In both there is a certain constitutional state, dependent on deranged digestion, during which exciting causes occasion local effects. These exciting causes in rheumatism are bad diet, hard work, exposure to cold and wet, and its subjects generally are the poor and labouring population. In gout, the causes are good diet, indolence, repletion, or indigestion, and its subjects are for the most part the rich and sedentary. The local manifestations in both are acute wandering pains, with pain and swelling—in rheumatism of the large, and in gout of the small joints, constituting the acute attack in the one, and the so-called regular attack in the other. These are combined with a tendency to various complications of the internal viscera, which are more or less dangerous to life.

The general indications of treatment are, in both diseases (1), so to regulate the nutritive functions as to insure a due balance between the amount of matters entering the blood as the result of digestion, primary or secondary, and the amount of matters discharged from the economy by the excretory organs. (2) To conduct the acute attack to a favourable termination, carefully watching the internal viscera, and being prepared to act with vigour should these become affected. Hence the treatment of these diseases resolves itself into what may be called curative and preventive—the first having reference to the acute attack, the second to the means most likely to hinder its return; the one must be carried out by remedies which act upon the blood and excretory organs, the other by the management of diet and exercise.—*Monthly Journ. Med. Sci.* Dec. 1852.

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15. *Treatment of Acute Rheumatism by Nitrate of Potash.* By Prof. J. H. Bennett.—Although the general pathology above mentioned [see preceding article], which considers rheumatism as a blood-disease, may be considered on the whole as correct, we are not yet enabled to explain by it the symptoms of an acute attack of the disease, where, in addition to the constitutional disorder, we have local pain, occasional heat, redness and swelling, with febrile symptoms. Most practical men have attributed these phenomena to a superinduced inflammation, although it has not been shown that exudation occurs, or that it is followed by the usual results of that condition. Besides, its erratic character is opposed to what we know of the process of true inflammation, and calling it an unhealthy inflammation in no way clears up the mystery. The real pathology of acute rheumatism, therefore, has yet to be determined, and, as a preliminary step, a careful histological examination of the affected tissues is absolutely necessary. So far as I am aware, this has never yet been attempted, if we except some observations by Hasse on the structure of the bones in rheumatism (see the *Monthly Journal* for June, 1847).

Our treatment of this disease, therefore, is purely empirical, sometimes directed against the pain, at others, against the supposed inflammation; now attempting to combat the pathological condition of the blood, then striving to remedy its effects by acting on the excretions; and not unfrequently giving specifics, in the hope that any change in the constitution, however produced, may be beneficial. In no disorder, probably, has such a crowd of opposite remedies and plans of treatment been extolled, and yet none of them can be

depended on, so that it has been imagined that six weeks' rest is the most useful prescription (Warren). The latest author on rheumatism endeavours to explain this by observing, that this need not be wondered at by "those who consider the true nature of the disorder, and the variety of circumstances under which the physician may be called upon to minister to his patient's relief. The bleeding, which in the young, plethoric, and robust, may be necessary to allay excessive vascular action and cause free secretion, may in the weakly induce irritability of the heart, and a consequent attack of cardiac inflammation. The opium, which in one person may prove of the greatest service in promoting free perspiration, and in allaying the general irritability of the system, may in another check the biliary and other secretions, and thus prevent the elimination of the rheumatic poison. The continued use of calomel, and the constant purging, which may be beneficial to one patient by removing large quantities of unhealthy secretions, may unnecessarily exhaust the strength of another, and tend very greatly to impede recovery. And so in regard to every remedy which has been proposed. What is useful at one time proves useless, or positively injurious, at another; and the conclusion is forced upon us, that what is wanted 'is far less the discovery of untried methods of treating disease, than of discriminative canons for the proper use of those we possess;'—far less the discovery of any new medicines, than the adaptation of our present remedies to the exigencies of each case." (Fuller on *Rheumatism*, p. 73.) These judicious observations may serve to explain the cause of our failure; but until we obtain more exact information regarding the *special* pathology of rheumatism, it is in vain to hope for a rational treatment.

For my own part, I generally treat rheumatism on what is called "general principles;" these are, to alleviate severe pain by anodynes, diminish excessive vascular action by moderate bleeding and saline antiphlogistics, and encourage every attempt at critical discharges by diaphoretics, diuretics, purgatives, etc. Occasionally, I have tried the effects of special remedies in this disease, and watched a series of cases, all of which were treated in the same manner. Thus I have tried aconite, and believe that alone it is of little service; colchicum, also, I have given frequently, and am of opinion that in pure rheumatism it is of no advantage, although in gout it is invaluable. This session (1851–2) you have witnessed another trial of this kind with the nitrate of potash, a remedy formerly recommended by Dr. Brocklesby, and which has been given with good effect by M. Gendrin, in the wards of La Pitié, in Paris, as recorded by Dr. Henry Bennett (*Lancet*, 1844, vol. i. p. 374). It has more lately been pressed on our attention by Dr. Basham (*Medico-Chir. Trans.* vol. xxxii.), who tells us that from one to three ounces of the salt, if freely diluted in water, may be taken by the patient in the course of twenty-four hours, without any injurious results, but with the effect of relieving in a marked manner the swelling, heat, and pain in the joints.—*Monthly Journ. of Med. Sci.* Dec. 1852.

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16. *Treatment of Spasmodic Diseases.*—Dr. Alexander Wood, in an interesting paper (*Monthly Journal of Medical Science*, February, 1853), points out the irrational and contradictory treatment usually pursued in spasmodic diseases. In the severer convulsive diseases, as tetanus and hydrophobia, he remarks, wine, brandy, and opium—stimulants—are conjoined with the cold affusion or cold bath—sedatives. Opium in small doses, which as a stimulant and soothing remedy might prove useful, is counteracted by tobacco, a sedative, or by irritating and depressing purgatives. We are told to administer the most violent purgatives in these diseases, and are encouraged to persevere in their employment to an enormous extent, by the hope of eventually obtaining from the bowels an assortment of strange and heterogeneous matters.

"In these diseases," he adds, "where the violent muscular effort demands a large supply of blood, and where the want of that supply increases the irritability of the system, we are taught to bleed, beginning with from thirty to forty ounces, and repeating it if need be. What end can bloodletting possibly subserve, unless in those exceptional cases, to be afterwards specially considered, where urea

exists in that fluid? There is no morbid matter in the circulating fluid which bleeding can remove! There is no inflammation which it can subdue! On the contrary, that terrible muscular action, like a consuming fire, is draining away the nutriment of the system even faster than your relentless lancet, and when the supply is exhausted the flickering taper will expire.

"Or, in the case of an unhappy infant, ill-thriven, ill-fed, who has imbibed irritability of constitution with the milk of a gay, luxurious, self-indulgent, and nervous mother, and who has had that irritability confirmed by a long course of ill-regulated management; why will you, when the irritation of a tooth has proved the cause of convulsions, not rest satisfied with removing the immediate pressure, and then set about improving the general system, in which the real danger lies, but apply cold to a head where no symptoms of congestion or inflammation is to be found, harrow the gums with daily scarifications, and administer a powerful purgative, glorying in the expulsion of depraved secretions, which only indicate the impaired state of nutrition, and the necessity for a very opposite kind of treatment?"

Dr. Wood very earnestly solicits attention to the following therapeutical considerations, based on the physiology and pathology of spasmodic affections:—

1. The importance of great attention to a proper supply of nutriment and of air, in all circumstances where either hereditary tendency or other circumstances are likely to develop convulsive diseases. Trismus nascentium is epidemic in the West Indies, from the absurd way in which infants are there treated. The same disease was banished from the Dublin Lying-in Hospital by proper attention to ventilation and cleanliness.

Laryngismus stridulus is never so satisfactorily treated as by change of air. The mortality of tetanus in our naval stations in the West Indies has been very much reduced, mainly, according to Dr. Dickson, by improved hygiene.—(*Med.-Chir. Trans.* vol. vii. p. 765.)

2. Let us divest our minds of the idea that it is necessary to treat the fit in any of these diseases. It is only a part of a train of morbid phenomena, and though the part most striking to the bystander, ought not to make the same impression on the intelligent physician. No one now thinks of treating the fit, either in epilepsy or in chorea, and why should we think it necessary in tetanus or hydrophobia?

3. Is it not worthy of consideration whether the obstinate constipation in tetanus and lead poisoning may not be a spasm of the muscular coat of the intestines analogous to that of the voluntary muscles, and, like it, not to be overcome by brute force (*i. e.*, purgatives)? Certain it is, that in lead colic the finger, introduced into the rectum, is held by the sphincter as by a vice, and pressed tightly upon by the gut, and that this pressure returns at each paroxysm.[1] Certain it is also, that the retraction and hardness of the abdomen, associated by Merat[2] with that internal constriction, is found also to exist in tetanus, though I am not aware that any one has ever explored the internal state of the bowel in that disease. It may be necessary to remove the morbid secretions in the bowels, though every intelligent physician will have to balance the amount of irritation produced by their presence with that caused by the drastic purgatives necessary for their removal. The spasm which retains them is the effect of the disease. It is to treat symptoms, to attack it alone; and when we succeed in overcoming the disease, the bowels will spontaneously relieve themselves. Tralles[3] found opium succeed in a case of ileus where purgatives had failed. I have seen the same. Lentilius[4] has confirmed this; and in a severe form of colic, Bonn[5] became convinced by experience that it was the most powerful remedy.

4. The most efficient and the most frequent agents in the production of these diseases are sedatives. Bloodletting is a most powerful sedative, and if carried to any extent in a healthy person produces convulsions. Is bloodletting, then,

[1] Tanquerel—Traité des Maladies de Plomb. etc. p. 210.
[2] Traité de la Colique Métallique.
[3] Opii. Usus et Abusus, sect. 2. p. 260.
[4] Eph. Mat. Cur. dec. 3, ann. 1, p. 131.
[5] De Officio Medici.

a suitable remedy in these affections? In chorea, it was formerly practised, and is now abandoned, from the injurious effects which it produced. In delirium tremens and hysteria, its use has also been given up. In epilepsy, it is rarely used by intelligent physicians, except to meet the requirements of secondary affections; and if we still retain its employment in the more severe convulsive diseases, it is probably only because their rapid course and frequently fatal issue makes it very difficult for us to ascertain the effect of any treatment.

5. In one class of convulsive diseases bloodletting seems, in the present state of our knowledge, to be indispensable. Where urea exists in the blood and produces convulsions, it must either be expelled or counteracted. We scarcely know how to accomplish the latter indication, and therefore are driven back on the former; but, even while seeking by bloodletting to get rid of the urea which is mixed with that fluid, we must never forget that it "both acts on the nervous system as a narcotic poison and impoverishes the blood, inducing degeneration of the tissues;"[1] and that, therefore, while we take blood to remove the poison, we must do our utmost to replace the nutriment which we are unavoidably compelled to abstract along with it.

6. Our views on this subject would become more definite and precise, could we avoid imagining that spasm implies augmented strength. It is not easy for us, when seeing the violent agitation of the system which prevails, to divest our minds of the idea of great power being developed, but the same remarks apply to mania, in which disease, thanks to the exertions of Dr. W. A. F. Browne,[2] general depletion, tartar emetic, brisk cathartics, and ice to the shaved scalp, are no longer in such vogue as they once were.

If such are the objections to the routine practice, what course ought to be pursued? It is easier to point out error than to demonstrate truth. But I venture to suggest—

7. That sedatives should be cautiously used. Chloroform and cold affusion have each proved fatal in delirium tremens.

8. That every effort should be made to put into the system as much nourishment as it is capable of beneficially employing.

9. But, if there is any faith to be placed in antipathic treatment, it is to stimulants we must most trust.

10. It is worth observing, that most of those chemical agents which produce convulsions, acting, as has been already said, in large doses as sedatives, do in small doses act as stimulants.

11. We find also, that where the minor spasms, as cramp, have been excited by irritation of the peripheral distribution of one class of nerves, as those of the mucous lining of the bowels, they are often relieved by irritation of the peripheral distribution of another class of nerves, as by friction on the skin.

12. The cerebral functions, more especially volition and sensation, being much in abeyance, any stimuli, whether mental or physical, by which they can be excited, should be freely given. It was on this principle that Boerhaave prevented the recurrence of epileptic attacks, by directing a red-hot iron to be applied to any who might be seized.[3]

13. The extreme sensitiveness to all irritations which exists whenever the spinal predominates over the cerebral system, suggests the propriety of enforcing the most absolute quiet, and preventing the access of all bodily and mental stimuli. In tetanus and hydrophobia, the creaking of a shoe, the slamming of a door, the sight or even the thought of water, or the gentlest zephyr playing on the surface of the body, excites a fit. Hence Armstrong tells us, that in tetanus those patients recover best who get little active treatment, but are nursed, as it were, through the fit.[4]

14. And if sources of irritation ought to be prevented, those actually existing ought to be removed, but never by irritants which are more powerful than themselves. This surely gives sufficient latitude to the most devoted admirer of

[1] Williams's Principles of Medicine, p. 150.
[2] Monthly Journal, 1841, p. 75.
[3] Falconer on the Influence of the Passions, p. 100.
[4] Lectures, edited by T. G. Thomson, p. 572.

the gum lancet, the bolus, or the bag and pipe, while it suggests to him a little caution in these somewhat coarse though most popular remedies.

15. And lastly, if I have not succeeded in pointing out any one remedy which stimulates the cerebral without exciting the spinal system, it is because few, if any, such are known. It is a subject of investigation well worth attention. And if no particular plan of treatment has been announced, which can be unhesitatingly recommended, I am perfectly satisfied if I have created any doubt as to the course which at present is too unhesitatingly followed. I think, at least, something has been done to show how much more constitutional these affections are than is usually supposed, and thus to open up new plans for prevention, if not for cure. And if in acute mania, in puerperal insanity, in delirium tremens, in chorea, in laryngismus, and may I add in epilepsy also, empiricism or the influence of authority has induced us to abandon antiphlogistic treatment, and to adopt stimulant and soothing remedies, I do not despair of a sounder pathology soon prevailing in regard to this whole class of affections, and of the discovery yet being made, that they are much more amenable to treatment than has hitherto been supposed.

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17. *Treatment of Diabetes.*—M. Bouchardat, in a memoir published in the 16th vol. of the *Memoirs of the French Academy*, declares that by the following plan he can cure the majority of cases of diabetes—the test of cure being not only present removal of the sugar from the urine, but the ability of the patient to employ feculent aliments without its reproduction. He, however, requires the intelligent co-operation of his patient, and, above all, the frequent testing of the urine, by the patient himself,[1] as a means of ascertaining progress and guarding against relapse. The means chiefly to be relied upon are those of a hygienic character; and, at all events, the power of these should be exclusively ascertained at first, before resorting to any medicinal agents.

1. *Diet.*—As long as the urine exhibits sugar, all feculent and saccharine aliments must be entirely excluded; but the patient need not be confined to what is called an exclusively flesh diet, although this, when not repugnant to him, is the best. Every description of meat, dressed with the usual sauces and seasonings (to the exclusion of flour, however), may be employed; and for those who can get over the prejudice against it, the flesh of *carnivorous* animals, M. Bouchardat says, is best. By proper management (and what cannot a French cook do?) that of the cat or fox becomes a highly relishing viand. Several poor patients, who otherwise would have been unable to procure a flesh diet, have resorted to this means with advantage. Fish, in all its numerous varieties, forms a valuable resource for both rich and poor, and may be eaten with abundance of oil and a moderate quantity of vinegar. Eggs, again, so susceptible of varied modes of preparation, are excellent; and although milk is forbidden, good fresh cream and all kinds of cheese are allowed. Except in extreme cases, green vegetables and salads, although they contain some sugar, starch, or gum, may be taken in moderate quantities; but abundance of oil, or the yolk of eggs, should be conjoined. For such patients as cannot well overcome their liking for bread and other feculents, M. Bouchardat has, during the last ten years, had a bread prepared of flour containing 70 per cent. of gluten.

As the prohibited feculent and saccharine bodies belong to the respiratory group of alimentary substances, we have to choose others from the same group; and those best calculated to supply their places are fatty bodies and alcoholic drinks. Among the latter, Bordeaux wine occupies a prominent place, as much as from one to two litres (from two to four pints) being admissible *per diem*, which, at 10 per cent. of alcohol, would supply about 150 grammes (2¾ oz.) of this substance in the 24 hours. Fatty bodies must not be given too exclusively, lest they excite disgust, but mingled with other aliments, from 150 to 200 grammes being required, in addition to the alcohol. Beer is

[1] For indicating the presence of sugar in the urine, he employs lime-water, and believes it to be a safer test than the copper solution; for the quantitative determination he employs exclusively Biot's polarizing apparatus.

objectionable, from containing dextrine. Coffee, drunk without milk or sugar, and to which a little rum, cream, or brandy may be added, is a good drink. To relieve thirst, Seltzer, Spa, Vichy, or soda water may be taken; but acid drinks, so keenly desired by the patients, are very objectionable. The patient should always eat and drink in moderate quantities, slowly masticating his food. This practice tends to the relief of the attendant dyspepsia, and to assist the distended stomach to return to its normal dimensions. A flannel bandage applied around the epigastrium contributes to the same end.

2. *Clothing.*—As chills operate very injuriously on these patients, warm flannel clothing forms a valuable protective agent, and beneficially excites the languishing functions of the skin. Indeed, some medicinal agents are of no avail unless aided by complete flannel clothing, which maintains diaphoresis. General frictions are very useful, and a moist warmth of the feet should be maintained.

3. *Exercise.*—To recommend this indiscriminately would be injudicious, for many patients are too feeble to undertake it. But when their strength has become somewhat recruited by regimen, walking, gymnastics, agricultural labour, &c., much expedite the cure, and are found, as recovery is approaching, to enable the feculent aliments to become utilized by the system.

4. *Pharmaceutical Agents.*—M. Bouchardat entertains a high opinion of the utility of carbonate of ammonia (from 5 to 15 grammes—77 to 230 grains—in the 24 hours), providing flannel clothing be worn. Other *alkalies* suffice for slighter cases, when the urine contains uric acid as well as glucose. Employed consentaneously with out-of-door exercise, they seem to exert great influence in preventing the reappearance of sugar in the urine, when feculent aliments are resumed. *Opiates*, if given alone, are mere palliatives; but when conjoined with other remedies, and in moderate doses, so as to act on the skin, they are very valuable. M. Bouchardat sometimes prescribes Dover's powder, but prefers the old theriaca before all other preparations, without defending the absurd complexity of its composition.

In severe cases of glucosuria, then, diet, exercise, and flannel clothing constitute the basis of treatment, carbonate of ammonia and opiates best aiding their action. Other remedies have their occasional uses, such as iron, tonics, chloride of sodium, and antiscorbutic plants. M. Bouchardat often employs emetics at the commencement, and endeavours to modify the disturbed functions of the liver by aperients, of which ox-gall with rhubarb are the best.

Circumstances influencing the effects of Treatment.—Foremost among the *favourable* indications in a case is the *rapid return of the urine to a normal state*, which may take place in from 24 to 48 hours after the feculents have been excluded. The *recent date of the affection* is another highly favourable circumstance; and because it is so, M. Bouchardat urges testing the urine whenever the slightest suspicion can be held, and for the detection of relapses, which are frequent and insidious. Other favourable circumstances are the retention of considerable *embonpoint*, the easy circumstances of the patient, and his being in possession of great perseverance.

The *unfavourable* circumstances are the reverse of the above; but negligence is still worse than poverty, as the poor man has some resources. The treatment of the case is usually ill managed in *hospitals*, owing to the vitiated air, the absence of exercise, the sameness of diet, and the insufficiency of surveillance. The existence of a great *appetite* is a common and not unfavourable circumstance, requiring only moderation in its gratification, at meals not too far separated. *Want of appetite* is a far more unfavourable sign, which should be actively combated. M. Bouchardat has found small doses of rhubarb, and exercise in the open air, of advantage. *Obstinate constipation*, resisting the most varied purgatives, is a bad complication, indicating disease of long duration, which has produced important modifications in the condition of the alimentary canal. Fatty substances, combined with matters which leave residue, as spinach and gluten-bread with bran, are here indicated. *Cold and damp air* is unfavourable to diabetic patients; but M. Bouchardat has had patients from Algeria, and has not derived advantage from sending others to Italy. M. Bouchardat agrees

with Dr. Prout, in considering the appearance of *albumen* in the urine, which is often met with as an unfavourable occurrence. The prognosis of saccharine albuminuria is not so serious as is that of simple chronic albuminuria. The frequency of the occurrence of *phthisis* in cases of glucosuria is familiarly known. In all the autopsies the author has made, when the patient has not been cut off by an intercurrent affection, tubercles have been found in the lungs; and he feels convinced that many cases of phthisis have had their origin in a glucosuria that has been overlooked, and which might have easily been removed. In severe and old cases of glucosuria, *vision* is always found more or less enfeebled; but in most cases, when not of old date, as the condition of the patient has improved under appropriate regimen, this amaurosis has subsided. When, indeed, this is not the case, the prognosis of the glucosuria is serious; and it will often be found complicated with albuminuria. *Impotence*, more or less decided, is another effect of glucosuria; but in young subjects the generative functions resume their power when the original disease is rationally treated. Glucosuria may occur at any *age*, from infancy to senility; M. Bouchardat having met with most cases between forty and fifty. He has met with none between eighteen and twenty-five. Old age does not constitute an obstacle to cure; but so difficult is it to watch over children, that the author is not aware of a sustained cure prior to fifteen years of age. He has met with more male than female patients.—*British and Foreign Medico-Chirurgical Review*, January, 1853.

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18. *Laws which influence the secretion of Sugar in Diabetes.* By Dr. Moritz Traube.—It has hitherto been thought sufficient to determine the quantity of sugar contained in the urine, either by analyzing that passed in the morning, or by extracting the saccharine matter from the entire amount evacuated during the twenty-four hours. There are, however, various circumstances in the diurnal life of the patient which may exercise a marked influence on this pathological secretion, the effects of which cannot be observed by following either of the above plans. Led by these considerations, Dr. Moritz Traube has in his researches pursued a method different from that adopted by other observers, and has thus obtained results which deserve to be briefly explained.

The patient on whom his observations were made was a young man of 28, who had for a short time laboured under diabetes. Of the ordinary symptoms of the disease, the best marked were the excretion of highly saccharine urine, extreme thirst, great increase of appetite, irregularity of the bowels, and disturbed sleep. Emaciation, however, had made but little progress, nor was there much perceptible dryness of skin. His regimen was so directed as to exclude as much as possible all amylaceous food. The urine was analyzed twenty-five times from the 1st to the 7th of January, and the following are the principal conclusions deduced by the author from his experiments: 1. The proportion of sugar contained in the urine was very different, according to the period of the day at which it was passed, varying from 225 grains to 26 grains in 100 cubic centimetres (39.3708 cubic inches, equal to 22 fluidounces and 6 drachms nearly). This fact proves how little can be inferred of the intensity of a case of diabetes from analyses conducted in the ordinary mode. 2. The quantity of sugar secreted was liable to remarkable oscillations—the maximum was 88 grains in the hour, the minimum rather more than 2½. 3. The amount of sugar was very sensibly augmented for a few hours after a hearty meal. 4. If the patient remained eleven hours without taking nourishment, it decreased so rapidly that during the last seven hours of this period a very insignificant quantity only could be found—less than 3 grains, for example, instead of upwards of a drachm, in the hour. 5. Usually, no sugar was excreted during the latter hours of the night; that is to say, at as long an interval as possible after a meal. 6. Almost all the sugar was derived from the meals, and disappeared after digestion was completed.

Five months subsequently, the patient, very much emaciated, and with greatly increased suffering, placed himself under the treatment by the Carlsbad water, and adopted a stricter regimen. The effect of this double plan was to produce a considerable improvement; his thirst and appetite were again re-

strained within nearly natural limits, and the excretion of urine was much diminished. Except that sugar was still proved to be present, the patient no longer presented any of the symptoms of diabetes. The analyses, repeated from the 26th June to 16th July, furnished the following results: 1. The proportion of sugar varied from 2 drachms to 17 grains in 100 cubic centimetres (22 fluidounces and 6 drachms, nearly) of urine. 2. The quantity of sugar excreted was greater than in the preceding experiments—the minimum being 24½ grains, the maximum rather more than three drachms. 3. It increased in proportion as the urine was examined nearer to a meal, and diminished according to the length of time which had elapsed after one; but no urine was now found, as formerly, free from sugar. 4. When a long time had elapsed without the patient having taken nourishment, the oscillations already described were no longer observed; the quantity remained stationary at about 45 grains. 5. There are two stages in diabetes: during the first, all the sugar contained in the urine is furnished directly by the ingesta; during the second, the sugar is not derived solely from the food, but is the result of a peculiar secretion of the liver. 6. In order to estimate the intensity of a diabetes, the urine must be analyzed in the morning, before a meal has been taken: if it is free from sugar, the disease is in the first stage; if it contains saccharine matter, the diabetes is in the second stage, and is advanced in proportion to the quantity of sugar voided in each hour. 7. As to treatment, the alkaline carbonates, administered in the form of Carlsbad water, while they modified certain symptoms, did not exercise any influence on the intensity of the disease.—*Dublin Quarterly Journ. Med. Sci.* Nov. 1852, from *Archiv. für Heilkunde, von Virchow. Nouvelle Encyclographie des Sciences Médicales*, April, 1852.

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19. *Character of the Pleuro-Pneumonia which has recently prevailed in London.* Dr. James R. Bennett relates (*Association Medical Journal*, Jan. 14, 1853), four cases of empyema opening through the bronchi, and gives some interesting information relative to the pleuro-pneumonia which has prevailed in London during the past eighteen months:—

The attention, he remarks, of most observers, must have been more or less arrested by the modifications which our treatment of local inflammation, and especially of pneumonia, has for some years been undergoing, especially in reference to the employment of bleeding. In this important remedy, the faith of many has been utterly shaken; nor has it fared better with antimony and mercury, in which many have been wont to place the most unlimited confidence. The dicta of Louis, in reference to the inefficacy of bleeding, except in the very earliest period of pneumonia, have not indeed been received in this country with unquestioning consent; but neither has the non-correspondence of his experience with that of British practitioners been satisfactorily explained. It cannot, I think, be doubted that, apart from varieties in what is called the epidemic constitution, there are important differences in the same disease, in so far as regards the constitutional symptoms by which it is manifested, dependent, perhaps, on climate, national constitutions, habits, modes of life, &c., as well as differences dependent on varieties of individual constitutions. All this, it may be said, is known and admitted; but is it sufficiently considered in practice? Is it sufficiently borne in mind, in estimating the statements and experience of observers situated in very different circumstances from our own? I am satisfied that much of the contrariety existing between French and British practitioners in reference to some of the more ordinary diseases, and the more common points of practice, is explicable by such considerations and by such alone. Thus, when going round the wards of the Hôtel Dieu last summer, with M. Louis, I observed several cases of erysipelas, and asked whether he found it necessary to employ stimuli to any extent in their treatment. I was struck by his answer, that he did not find it necessary to employ any treatment beyond rest and the most simple dietetic rules; for that in his experience idiopathic erysipelas was a very trifling disease, and never fatal, unless associated with some visceral disease or cachectic habit. Now this certainly is not the experience of our British hospitals; at all events, not of the London hospitals. Nor is it the experience of private practitioners in this country. It is

true that the majority of cases of idiopathic erysipelas do well, and that the disease manifests a strong natural tendency to cure, after running a specific course. But with us it is by no means a trifling ailment—it is essentially of an adynamic type, and requires a tonic treatment; more decided and vigorous, it may be, in some cases than in others. But whilst it is manifestly necessary to exercise much caution ere we adopt or reject the results of the experience of other observers, whether of our own or any other country, scarcely less caution is requisite either in following or discarding our own so-called experience. It appears to me that we are by no means warranted in inferring that, because bleeding and antimony are not found to answer so well in the treatment of pneumonia as we had been taught to believe, or as we formerly found them to do, therefore our former experience, or that of our predecessors, was fallacious. These remedies will, I believe, be found fully to warrant the confidence that was placed in them, when they are judiciously employed in the treatment of the same type of disease. We must, however, be sure that the same phenomena are present which former observers have pointed out as the indications for bloodletting. We are not justified in questioning the correctness of their therapeutic precepts, unless we have applied them and found them wanting, not merely in what we believe to be the same disease, pathologically speaking, but in the same disease attended by those phenomena which they depicted in no obscure or doubtful manner. Most unnecessary and unmerited discredit is thrown on our science, and especially on our art, therapeutics, by thus questioning or discarding the results of former experience, merely because they are not available for our present necessities. The arch enemy, the spirit of quackery, is ever ready to turn to good account, for his own purposes, such error. And still greater is the advantage given him when, from overweening confidence in established remedies, or inability to discover "the signs of the times" in reference to disease, there are found those who obstinately persist in the attempt to make disease accord with their treatment, rather than change their treatment with the disease. Doubtless much of what is called experience is fallacious; and we ought not, from unworthy fears of bringing discredit on our art, to shrink from abandoning error when once proved to be error. There has been no little craft displayed by the globulists in the selection of those acute diseases which they have made their stalking-horse; and nothing is more easy than the attempt to turn to the discredit of legitimate medicine, the difference of treatment pursued in diseases called by the same name.

True sthenic pneumonia of the croupous variety, *i. e.*, inflammation attacking the air-cells, and characterized by the effusion of plastic matter, by which these are obliterated, and which leads to solidification of the lung, which, on being cut into, presents the characteristic granular surface, arising from the filling of the cells with solid lymph, has become a comparatively rare disease of late. The ordinary received descriptions of this disease are, however, true to nature; and there would not, perhaps, on close examination, be found to be much difference of opinion among experienced judicious practitioners, as to the treatment of such disease. For my own part, in proportion as I found a given case of such disease to correspond in its constitutional phenomena with those which the writers of the time of Cullen, and even much subsequently, described as indicating the necessity for bloodletting, I should with them consider it as the "remedium magnum," and employ it with as much confidence as they did. The pleuritis which accompanies this form of pneumonia is, for the most part, attended simply by the effusion of plastic matter, adhering to the two sides of the serous membrane, and unassociated with much fluid. And the pleuritis itself is quite a subsidiary and secondary disease, the mere result of the extension of the inflammation from its contiguous seat in the lung itself. The pleuro-pneumonia thus constituted, partakes of the same general character as the simple pneumonia.

In all these, as well as in other important respects, the inflammatory disease which has of late prevailed, and of which I have detailed several examples, differs considerably. It differs both in the character of the attendant constitutional symptoms, of the structural changes, and the treatment demanded. It is not, however, what has been generally understood as typhoid pneumonia.

Certainly it is not always, nor generally, associated with either typhus or typhoid fever. It is, for the most part, unaccompanied either with any specific form of eruption, or evidence of contagion. In many instances the pleuritis has been the earliest of the two affections, in the order of occurrence, and in most, the more prominent affection. In some cases the disease has begun with catarrhal symptoms, subsequently passing into pneumonia or broncho-pneumonia, concurrent with the supervention of pleurisy. The pain has been frequently great, and a very prominent symptom; and effusion has taken place rapidly and to a great extent, assuming, I think, very early, a purulent character. Cough has not been either a troublesome or prominent symptom. The sputum at some period, sometimes earlier and sometimes later, has almost always indicated that the substance of the lung and the air-cells were involved in the inflammatory action. It has not, indeed, presented the ordinary characters of the brick-dust or rusty sputum of the sthenic pneumonia, expectorated in small masses of extreme viscidity; but it has always been more or less tenacious and glairy, sometimes streaked with blood, and at other times presenting the appearance of prune-juice, or of a dirty greenish-yellow colour, and copious in quantity. It has varied also in the same case from day to day—at one time being free from sanguineous impregnation, having the appearance of simple viscid bronchial secretion, and the next day, perhaps, being more of a bistre colour. The dyspnœa has not usually been urgent, nor the respiration at all laboured, but for the most part of increased frequency. In most cases the skin and tongue have been moist, the former clammy, and the latter loaded with a dirty creamy fur—sometimes, however, dry and brown. The pulse, generally rapid, has usually been soft, sometimes very feeble—the urine, sometimes high-coloured and scanty, in other cases has been copious and of a pale straw colour. In short, the constitutional symptoms have not been those indicative of excited action of the vascular system; so far from it, that, judging by the skin and pulse alone, it might frequently be inferred that little or no fever was present. I have seen, in some instances, even where the greater portion of one lung was manifestly involved in the inflammatory action, but little if any appreciable excitement of pulse or difficulty of respiration.

The physical signs have shown that the inflammatory action has spread rapidly over a large extent of surface, although generally confined to one side. It is also deserving of special attention, that the upper lobes are much more frequently implicated than is observed in the ordinary sthenic pneumonia. The amount of solidification of the lung that ultimately results, is not, however, always correspondingly great, or, at all events, is not very complete; nor is it so permanent; that is, the lung sooner returns to a condition in which it is more or less permeable to air. It has appeared to me to be checked in a measure by the pleuritic effusion as this becomes copious; the ordinary result of copious pleuritic effusions ensuing—compression rather than enlargement and solidification from effusion of solid matter in the substance of the lung. Where the amount of pleural effusion has been less, and the pneumonitis has pursued its own course, uninfluenced by external pressure, suppurative infiltration of the lung has often supervened, without much complete preceding solidification. This state of lung, as was manifest in the case of Maroney, shows a tendency to gangrenous destruction; and one of the chief points of interest in the *post-mortem* history of Maroney's case, is the small amount of solidification that was found, notwithstanding the extent of lung involved. It was only in the immediate vicinity of the gangrenous cavities that the lung was impervious to air and non-crepitant. Indeed, it seemed pretty clear that the case proved fatal, not so much from the extent of lung originally involved in the inflammatory action, as from its character and the consequent gangrene. The suppurative tendency is still more marked in the pleural cavity. This tendency to suppuration, breaking down, and gangrene of the tissues, probably accounts for the particular termination of the cases detailed; at least, in two of them. In the case of the gentleman first detailed, I believe the principal accumulation of pus was interlobar, and that, as the acute stage subsided, the effusion in the general cavity of the pleura was, for the most part, absorbed; whilst a considerable collection still remained pent up between the lobes of the lung and its

root; so that, when, at length, the matter obtained exit, the outlet was very direct, opening immediately, or nearly so, into the larger bronchial trunks. Thus, the discharge was sudden, rapid, effectual, and uninterrupted till the whole was expectorated. The sides of the cavity would thus be brought more readily into apposition, and its obliteration effected. The steady, rapid progress towards cure of this case, after the discharge of the matter, independent of the physical indications, shows, I think, how little true solidification of the lung there had been.

The absence of the signs of pneumothorax (except in the case of Connor, where the indications of a circumscribed pneumothorax were well marked) is a point of great interest in all the cases detailed. This circumstance may perhaps excite doubts in the minds of some, whether there were really any communication with the bronchi. But I know not in what other way we are to explain the sudden removal of the pleuritic effusion, and the circumstances attending that removal. In the first case detailed, there cannot be the least doubt that a very large accumulation of fluid obtained sudden exit by the bronchi, so as for a time to place the life of the patient in extreme jeopardy. In the last case, the sudden discharge of a small quantity of fetid, gangrenous matter, succeeded by more copious purulent expectoration, was immediately followed by marked changes in the physical signs, which indicated the rapid disappearance of an accumulation of fluid in the pleura. Whether, in this and the other cases, the absence of all signs of the presence of air in the pleural cavity is to be ascribed to the existence of extensive adhesions, or to any peculiarities of the communication with the bronchi, I am unable to say.

Such are the more important features of the thoracic inflammation, to which I venture to call the attention of the profession; and they are sufficient, I think, to show that it differs, in many most material respects, from the ordinary form of either pneumonia or pleuritis. Upon what does this difference depend? Not, I think, merely on peculiarities of individual constitutions. I have seen the disease in various constitutions, and in persons moving in very different social spheres. It has no necessary connection with any form of continued fever. Is it connected with erysipelas? I am disposed to think that it is; not that it is generally associated with the external manifestation of erysipelas. The pneumonia that is associated with fever, erysipelas, and cachectic states of system generally, it is well known, is usually of the asthenic type; but I am disposed to regard the pleuro-pneumonia now under discussion as itself a form of erysipelatous disease, and for these, among other reasons: 1st. In its pathological features, it closely resembles erysipelatous inflammation; 2d. It has prevailed contemporaneously with external erysipelas; 3d. An erysipelatous form of cynanche has been very common, and, in many cases, has been an attendant on the thoracic inflammation; sore-throat having been frequently complained of in the beginning, and, as this has subsided, bronchial symptoms have occurred, to which the pneumonia and pleuritis have succeeded. I feel, however, bound to admit that it differs in some material respects from the ordinary forms under which erysipelatous inflammation of internal organs has hitherto been known to us.

In respect to the treatment of this disease, it is manifest that it must differ materially from that of the ordinary forms either of pneumonia or pleuritis. General bleeding is rarely if ever admissible; I have never employed it. Local depletion, to a limited extent, especially in the early stages, is sometimes decidedly useful, especially from the relief it affords to the pain and the congested state of the parts implicated. Counter-irritation may be more early employed than is desirable in the more sthenic forms. Blisters, indeed, I have found of the most marked benefit, and have been in the habit of repeating them frequently. Calomel and antimony, if used at all, must be very cautiously and sparingly employed. Dover's powder, in doses of five grains, with a grain of calomel, three or four times a day, has appeared to me very useful. But I have not given the calomel with the view of affecting the system, so as to induce any of the symptoms of mercurialization. Ammonia has proved the best expectorant; and this I have given usually with the acetate of ammonia, sometimes with the camphor mixture, and at other times with serpentaria or senega.

In almost all cases, I have allowed the patients beef-tea, and very frequently found a certain portion of wine to be necessary. But under any plan of treatment, the affection is attended by great danger, and, in its worst forms, very fatal. So rapid has been the progress in many cases, so great the prostration, even with the most cautious treatment, that I have, in more than one case, been led to doubt whether the patient would not have had a better prospect by entire abstinence from all antiphlogistic treatment, so called, and the use of stimuli alone *ab initio*. Ample and efficient blisters, with wine, beef-tea, and ammonia, are, I believe, the remedies on which most reliance should be placed in the most aggravated and most characteristic examples of the disease. But such remedies must be used cautiously. Many cases will do well with little or no treatment, even though, as ascertained by the physical signs, there be a considerable amount of inflammation; a simple diet, not too antiphlogistic; rest, and an open state of the bowels, with some counter-irritation, being all that are requisite; anything beyond this, like the homœopathic globules, serving only to amuse the patient, and gain for physic a degree of credit which is not its due.

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20. *Angina Pectoris.*—[Dr. O'B. Bellingham communicated to the Surgical Society of Ireland (Jan. 15, 1853) a case of angina pectoris, and offered the following theory in relation to this affection, which is worthy of consideration:] Angina pectoris has been heretofore always described as a distinct disease. The earlier writers upon the subject supposed it to have some mysterious connection with ossification of the coronary arteries; others, that it depended on excessive deposition of fat *upon* the heart. Modern pathologists having failed not unfrequently to discover either of these morbid changes, and seeing the suddenness with which it supervenes and subsides, refer it to *spasm* of the heart; while others, again, looking more to the character and intensity of the pain, regard it rather as a form of *neuralgia*, and describe it under the name "Neuralgia of the Heart."

I do not think sufficient evidence has been adduced to entitle angina pectoris to be regarded as a distinct disease; neither do I think it necessary to call in the aid of spasm or neuralgia, when there are circumstances in its clinical history and pathology which seem to be quite capable of explaining all its phenomena independent of either. Thus, angina, in a well-marked form, is not seen except in cases of organic disease of the heart; and as a general rule, it is not observed even in these, unless something occurs either to disturb the action of the heart, or to hurry the circulation.

The *immediate cause* of angina pectoris appears to me to be a sudden impediment to the *coronary* circulation, particularly to the return of the blood by the coronary veins, itself in general the result of a temporarily over-distended state of the chambers of the heart, and an inability in them to empty themselves, whether owing to weakness of the muscular tissue of the parietes of the left ventricle, or to other causes. For instance, if the cavity of the left ventricle is considerably dilated, or its walls are attenuated, or softened, or have undergone fatty degeneration, the contractile power of its muscular tissue will be impaired in proportion; and if the circulation happens to be suddenly hurried, or the heart's action to be suddenly disturbed, the cavity of this ventricle might become so much distended as to be unable to contract upon its contents, which would be immediately followed by distension of the auricle on that side, and if relief is not quickly experienced by distension of the right chambers of the heart.

It is scarcely necessary to say, that in a normal state of the circulation, all the chambers of the heart are never full of blood at the same moment. When the ventricles are filled, the auricles are comparatively unfilled, and *vice versa*. Here, however, we would have a suddenly distended state of the chambers on both sides of the heart at the same moment. From the position of the coronary vessels in the grooves of the heart, they cannot, we know, suffer compression during the alternate movements of the ventricles and auricles; but if the auricle and ventricle upon each side of the heart are distended at the same time, these vessels, but particularly the veins, must suffer compression, by which

their circulation will be impeded; and the great coronary vein, in addition, may be prevented from freely emptying its contents into the right auricle, in consequence of the distended state of this cavity.

We know, likewise, that the normal capacity of the pericardial sac is but little greater than that of the heart in its ordinary state of distension; and that this membrane is composed of tissue which does not *suddenly* yield. The parietes of the heart would, therefore, under the circumstances that I have described, be placed between two compressing forces—an undue amount of blood in the chambers of the organ, and the unyielding pericardium upon the outside. The effect of this compression of the heart's tissue would necessarily be to impede still further the coronary circulation, and to clog still more the movements of the organ, and the condition of the heart would be somewhat analogous to that in which a large amount of fluid was *suddenly* effused into the pericardial sac, from rupture of a vessel or other cause.

The organic lesions of the heart most likely to be attended with angina would, therefore, be a condition of the aortic valves permitting free regurgitation, with a rigid, dilated state of the ascending portion of the arch of the aorta, which permits the blood from the large vessels to regurgitate into it, combined with either—

1. Dilatation of the cavity of the left ventricle; or,
2. Attenuation of the parietes of the left ventricle; or,
3. Softening or fatty degeneration of the muscular tissue of this ventricle.

For instance, when the aortic valves permit free regurgitation, there is at each ventricular diastole a reflux of blood from the aorta into the ventricle at the same time that the current is entering it from the auricle; the left ventricle consequently is unable to empty itself, the state of distension in which it is kept leads to permanent dilatation of its cavity, which tends still further to embarrass the circulation by enfeebling the ventricle, and diminishing its power of expelling its contents.

It has been shown by Hales, that "each square inch of the surface of the interior of the ventricles has a pressure upon it during the systole equal to about four pounds," and, "as the resistance which the heart has to overcome in contracting, is, according to hydrostatic laws, in proportion to the extent of the inner surface of the cavity at the commencement of the systole," if the cavity of the ventricle is dilated, more force will be required to enable the ventricle to expel its contents; and the greater the amount of the dilatation the less able will the ventricle be to overcome the resistance. In such a state of the aortic valves, and in such a condition of the ventricular cavity, if the parietes of the left ventricle are, in addition, attenuated or softened, the ventricle will be still less capable of overcoming the resistance, and a very trifling muscular exertion, or a sudden mental emotion, may lead to over distension of its cavity, followed by distension of the other chambers of the heart. If, at the same time, the arch of the aorta is dilated, and its coats are rigid and inelastic, permitting the blood from the large arteries which come off from the arch to regurgitate into it, the coronary circulation will be necessarily greatly impeded, and a paroxysm of angina will be the result.

Any one of the foregoing morbid conditions of the heart may be present, or two or more of them may be combined, without angina necessarily occurring; indeed, as long as the circulation continues tranquil, and as long as the left ventricle is able to get rid of the blood which enters its cavity, the latter cannot become over-distended. If, however, the heart's action is disturbed by some sudden mental emotion, or other cause; or even without this occurring, if the stomach is loaded with indigestible food, and it and the intestines are distended with flatus, by which the cavity of the chest is encroached upon, and the heart's movements are impeded, a paroxysm of angina may be the result. Hence, in persons who have had previous attacks, it is liable to supervene during sleep, when it may be the result of a frightful dream, disturbing the heart's action; or of considerable distension of the stomach by flatus, impeding the movements of the organ.

Dr. Forbes,[1] in his able article on the subject, has shown that *plethora* is a

[1] Cyclopædia of Practical Medicine.

very common complication of angina; a state which, if combined with a weak heart, would give a further predisposition to the attack. Thus, "the subjects of angina (Dr. Forbes observes) are mostly of the male sex, above fifty years of age, and a great majority of them belong to that class of persons who are enabled to indulge in full living, without the necessity of undergoing severe bodily labour." Again, "gout is a very frequent disease in persons subject to angina, and obesity is extremely common." "The very existence, too, of angina tends (he adds) to produce plethora if it did not previously exist; a sedentary life and abandonment of all active bodily exertions, are almost inevitable consequences of the disease."

It may, perhaps, be objected that the foregoing explanation of the cause of angina is insufficient to account for the peculiar pain which accompanies a paroxysm. I cannot, however, imagine any state more likely to be attended by intense distress, anxiety, and suffering, with a sensation of impending dissolution, than such as I have described, where the chambers of the heart are immoderately distended, the coronary circulation temporarily obstructed, the heart's movements clogged or impeded, or its muscular tissue compressed.

Angina pectoris, in its most marked form, is almost peculiar to advanced life; thus, of 84 cases recorded by Dr. Forbes, 72 were above fifty years of age, and only 12 under that age. The reason of this is sufficiently obvious; the morbid conditions upon which it depends are, in some measure, limited to advanced life. Again, when a person has been once the subject of angina, subsequent attacks are very likely to ensue if the exciting causes come into operation, because the diseased states on which it depends are irremediable. Lastly, angina is rare in the female compared with the male, because the diseased state of the aorta so frequently associated with it, is very seldom met with in the female; indeed, regurgitant disease of the aortic valves itself, is less frequent in the female than the male.

In conclusion, then, I would say, that angina pectoris ought to be regarded rather as a *symptom* of organic disease of the heart than as a distinct form of disease; in fact, what dyspnœa is to the lungs, angina appears to be to the heart, and it might without impropriety be termed the *dyspnœa of the heart.* Thus both are met with in very variable degrees of intensity; both have sometimes apparently almost purely a spasmodic character, and both are often the result of mechanical causes—in the one case, of some impediment to the free passage of air into or out of the lungs; in the other, of an impediment to the circulation in and through the heart. It would, indeed, in my mind, be almost as absurd to class dyspnœa apart, and describe it as a distinct affection, as it is to make angina a separate disease. As dyspnœa may arise under variable and opposite states of pulmonary disease, so angina may ensue in different forms of cardiac disease. We can, likewise, easily understand, from what precedes, that if the paroxysm of angina is slight, it may pass off spontaneously, or under the influence of stimulants and other appropriate measures, the heart may be enabled to get rid of the blood which distends its cavities; while, if the paroxysm is severe and continued, complete arrest of the coronary circulation may ensue, followed necessarily by cessation of the heart's action and the death of the patient.

The conclusions which I would draw from what precedes, are—

1. That angina pectoris is to be regarded as a symptom of disease of the heart, not as a distinct affection.
2. That it does not occur except where organic disease of the heart, generally of long standing, exists.
3. That its connection with spasm, or neuralgia, is more than doubtful.
4. That its probable cause lies in impediment to the coronary circulation, particularly to the return of the blood by the coronary veins.
5. That the diseased states of the heart in which it is most liable to ensue, are a condition of the aortic valves permitting free regurgitation, with a rigid dilated state of the ascending portion of the arch of the aorta, combined with either dilatation of the cavity, or attenuation, or softening of the parietes of the left ventricle.
6. That, even in these diseased states, angina may not occur unless the

heart's action is suddenly disturbed, or its movements are clogged, or impeded by some mechanical cause.—*Dublin Medical Press*, Feb. 9, 1853.

21. *Affections of the Bronchial Mucous Membrane in Chronic Renal Disease.* By Geo. Burrows, M.D., and W. Senhouse Kirkes.—In the course of chronic disease of the kidneys, the several great mucous and serous membranes are exceedingly prone to become seriously affected. The affection of the mucous membranes is manifested in various disturbances of their ordinary functions, and occasionally in an inflammatory process of a more or less severe and protracted kind, attended usually with a copious discharge from their surface. The affection of the serous membranes consists chiefly in the accumulation of fluid within their cavity, and occasionally in a low but often fatal inflammatory process. There seems to be sufficient reason for believing that the affections of the mucous and serous membranes, as well as many other secondary complications occurring in the course of chronic renal disease, are due, in great measure, to the disordered state of the blood which the structural affection of the kidneys engenders; for, in nearly all confirmed cases of renal disease, the respiratory and gastro-intestinal mucous membranes present signs of being more or less disordered, and the tendency to effusions and inflammations within the different serous cavities is more or less strikingly manifested. The affection of the respiratory mucous membrane is shown in the almost habitual catarrh to which the victims of renal disease are subject; that of the alimentary mucous membrane in the nausea, vomiting, and disordered bowels so common in this disease; and, when the disorder of either of these great mucous membranes runs on to inflammation, the profuse discharge which in such case often takes place from the affected surface may with reason be considered to result from a natural effort to remove in this way from the system certain injurious materials which, in consequence of the disease of a great excreting organ, have accumulated within the blood. For, although the mere process of discharge may be productive of serious distress and debility, yet it not unfrequently happens that, after such free secretion from a mucous surface, the dropsical effusion which previously existed becomes greatly diminished, and various cerebral and other symptoms, indicative of the circulation of urea in the blood, subside or are removed. And it seems likely enough that the relief in such cases is due to the elimination of some of the morbid materials of the blood along the mucous surface from which the free discharge has taken place. The probable correctness of such an opinion is supported by the almost constant disorder of the gastro-intestinal mucous membrane, manifested in nausea, and vomiting, and profuse diarrhœa, which ensues when, from accident or experiment, any noxious organic materials are received into the blood. Examples of this occur after the absorption of foul gases, or the injection of putrid matters into the bloodvessels of animals, also in puerperal fever with uterine phlebitis, and in the typhoid or extreme hectic condition when gangrene is going on. That the affection of the mucous surfaces in chronic renal disease is dependent on the permanently abiding disorder of the blood, and not on a mere temporary or accidental cause occurring in the course of the disease, is made probable, too, by the very obstinate and protracted nature of the mucous affection, by its liability to relapse independent of ordinary exciting causes, and by its frequent persistence in a chronic form long after the violence of its first attack has been subdued. Chronic catarrh and chronic diarrhœa, with occasional vomiting, are noted among the most common and troublesome of the secondary affections of renal disease, and their obstinacy and intractableness are probably in great measure due to the fact that the cause which gave rise to them is of a permanent and not a transitory kind, and dependent on a general morbid condition of the blood, and not on any circumstance acting only locally and temporarily on the affected membrane.

The constant discharges which in some cases take place from the bronchial and intestinal mucous surfaces, do not usually leave any structural changes discoverable in these membranes after death, but occasionally, there is distinct evidence of ulceration of the intestinal mucous membrane, usually of a dysenteric kind, and affecting the large intestine. It may admit of question whether the dysenteric ulceration in such cases is a mere accidental complica-

tion, independent of the primary disease of the kidneys, or, as seems more probable, results from the direct irritation of an unusual and probably acrid secretion continually eliminated from the affected surface.

It is not common for both of the great mucous membranes to be simultaneously affected to any considerable extent in renal disease; for although each of them is usually somewhat disordered, yet, generally speaking, the principal mischief is limited to one, and rarely leaves it to attack the other. Thus, when the brunt of the affection falls upon the bronchial mucous membrane, it is unusual for it to leave this surface and attack that of the alimentary canal; and the same persistence of the affection in the membrane first attacked is observed when the alimentary mucous tract is the main seat of the secondary affection. When either mucous membrane is seriously affected, and free discharge takes place from its surface, it usually happens that the tendency of the disease to kill by dropsy or cerebral disorder is kept in abeyance, though death not unfrequently arrives in consequence of the prolonged distress and exhaustion resulting from the perpetual drain from the affected mucous surface and the attendant disorder of its own proper function as a respiratory or alimentary organ. It may be observed, too, that affections of the mucous membranes, especially of the respiratory tract, are not limited to any particular stage of the disease, being as common in a first attack of febrile dropsy, or dropsy after scarlet fever, as when the disease is thoroughly confirmed, or advanced to its last stages.—*Medical Times and Gazette*, January 1, 1853.

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22. *Cirrhosis of the Liver.*—M. Monneret, believing that the term cirrhosis has been applied to very different pathological conditions, endeavours in these papers to speak of it with some precision, while relating the cases of the disease which have come under his own observation. He defines cirrhosis as a chronic and apyretic affection of the liver, characterized by more or less impediments to the hepatic portal circulation, which leads to peritoneal effusion, dilatation of the collateral veins, and often to œdema of the extremities, and hemorrhages from the various mucous surfaces.

The *anatomical changes* which almost always accompany these symptoms are induration and atrophy of the entire tissue of the gland, or of its vascular portion, with the yellow change of tissue, whether granular or not. The retraction of the hepatic substance gives rise to the diminished size of the organ, and at the same time that the portal veins become less visible, the yellow portion continues to predominate over the other, until it entirely supersedes it. The thickening of Glisson's capsule and the serous layer that lines the liver completes the anatomical character.

M. Monneret's memoir is based upon twenty-four cases, in fourteen of which autopsies were performed, this being the entire number of cases he has been able to meet with during the ten years his attention has been directed to the subject. He has compared these cases with forty others of the various lesions of the organ, as also with fifty cases of disease of the heart, in which the condition of the liver was examined.

He has taken great pains in the *measurement* of the liver, by means of plessimetry, having accurately measured in this way 100 patients. In a healthy man lying in the horizontal position, the hepatic dulness commences four centimetres (about 1½ inch) below the right nipple, and terminates at the edge of the ribs, which forms a tolerably exact natural inferior boundary. At the medium line, it is placed behind the scaphoid cartilage, passing a little towards the upper part of the epigastrium. Posteriorly and laterally it ceases at the level of the ribs. The following figures indicate the normal distances which separate the upper line of hepatic dulness from the level of the ribs: In thirty-one cases its mean height at the *median line* was 5.62 centimetres; its minimum 1.5, and its maximum 9.5. To the right *nipple* the mean was 12.64 centimetres, the minimum 7.8, and the maximum 18. In the *axillary* region, the mean was 10.57, the minimum 7.3, and the maximum 13. In the *scapular* region, the mean was 9.11, the maximum 14. In twenty-five cases the hepatic dulness commenced at four centimetres below the nipple. The *thoracic vibration*, perceptible to the hand, while the patient counts with a loud voice, extends three

or four centimetres below the upper limit of hepatic dulness. In cirrhosis, the normal limits of hepatic dulness have never been found exceeded. In some cases they are scarcely diminished, while in nine have they been so by more than five centimetres. The meteoric state of the intestines renders exploration sometimes difficult by pressing the liver into the thoracic cavity; but when authors speak of hepatic hypertrophy they confound other lesions with cirrhosis.

The *peritoneal effusion* is of very slow occurrence, fluctuation long continuing obscure, and the patient often not being aware of tumefaction of the abdomen. The progress of the dropsy is gradual, and there is not observed those alternations of increase and diminution seen in dropsy arising from hepatic congestion, whether connected with disease of the heart or other lesions. The fact of the dropsy becoming established before anasarca of the extremities, has been too much generalized. The integuments of the abdomen becoming infiltrated sooner than can be explained by the abdominal distension is explicable by the obstruction to the venous circulation.

In like manner, the *dilatation of the veins* of the abdominal and thoracic parietes may become considerable before any notable effusion occurs. The most delicate *capillaries* undergo dilatation, so that their elegant arborescence becomes perfectly visible, and that by no means always when distension is greatest. These facts are explicable by the obstructed state of the portal circulation. In some cases, however, no such dilatation and inosculation of veins is present, ascites existing alone. In this point of view, it is interesting to remark that in five out of ten of Dr. Hillaret's cases of portal phlebitis there was no effusion. It is probable that in some of these, as well as in some of the cases of cirrhosis, the obstruction has only been partial, and hence the absence of some of the usual symptoms.

Not only, however, is the hepatic circulation thus disturbed in cirrhosis, but in all probability the *composition of the blood* has undergone change, giving rise to the *hemorrhages* which are of such frequent occurrence. Epistaxis, slight in quantity, is the form that M. Monneret has usually met with; in some cases the stools have been tinged with blood.

We cannot abstract the details of the eleven *autopsies* M. Monneret furnishes an account of; but may advert to his summary of the most common lesions. 1. The liver is sometimes diminished by a third or one half its size. 2. Its surface presents more or less prominent lobules, separated by whitish furrows, the normal disposition of the hepatic structure being exaggerated. 3. The capsule of Glisson is thickened, whitish or opaque, more close and resisting, and intimately adherent. 4. This capsule is found in a hypertrophied state, in the interior of the parenchyma, as whitish lines, inclosing the hepatic lobules and sometimes yellow granules. 5. The change in the proportion of the two substances of the liver has long been admitted as a characteristic of cirrhosis: but while acknowledging the convenience of the expressions red or vascular, and yellow or bilious portions, and believing the affection is one which obstructs the circulation in the vena porta, Monneret doubts the correctness of these anatomical statements. M. Lereboullet believes in the conversion of the bilious into fatty cells, and Monneret has always found by the microscope that a large quantity of fat incrusted the biliary cells. He believes, however, that this fatty transformation itself is dependent upon the atrophy of some element of the parenchyma. 6. The extreme frequency of peri-hepatic peritonitis is of importance in the anatomical history of cirrhosis; for it may be asked whether this phlegmasia induces induration of the proper membrane of the liver, the loss of extensibility of which may be the cause of the hepatic retraction. 7. The degree of induration of the liver varies, being in some cases comparable to scirrhus, and apparently due to the predominance of the cellulo-fibrous portion. 8. There is great dryness of tissue from paucity of blood. 9. The alteration may occupy an entire lobe or even the entire organ; but it may do this in very different degrees. 10. As a negative character worthy of note, it may be mentioned that there are no lesions of the bile-ducts, and the bile is apparently normal. 11. In several cases a new circulation has been found established in the fibro-cellular partitions of the lobules, a brilliant arterial network being dis-

tinctly visible. This may be regarded as a supplementary circulation of the hepatic artery, it having been observed in cases in which the vena porta was entirely or partially obstructed.

In respect to the *causes* of this affection, the habitual excessive use of alcohol is undoubtedly one; but in other cases bad and insufficient diet is alone discoverable. These circumstances explain the frequency of disease of the alimentary canal, which is observed in cirrhosis. The frequency with which inflammatory disease of the liver has preceded this condition is undoubted; but whether the thickened state of the capsule be an extension of this, or one of the lesions accompanying organic atrophy, is doubtful. Inflammation is not essential, as in certain cases it has not prevailed. The congestions of the liver which are so frequently seen in disease of the heart are not, as has been stated, first stages of this affection. Their effect is to lead to dilatation of vessels, while cirrhosis leads to their obliteration. In cirrhosis, the yellow secreting tissue, formed of biliary cells, and yellow granules, is not hypertrophied, and only becomes more visible and prominent from the atrophy of the portal and vascular system. In hypertrophy, the functional activity gives rise to jaundice, but not to obstruction of the circulation; while in active congestion and phlegmasia, even when slight, characteristic symptoms are present, as increase in size, tenderness, irregular fever, fibrinous blood, and icteric urine.

For the *treatment* of so fatal a disease, M. Monneret has little to recommend. At least temporary benefit is sometimes derivable from alterative doses of blue pill, combined with Vichy or soda water, and alkaline or sulphurous baths. The diarrhœa and vomiting so obstinate in some of these cases are best treated by large doses of bismuth.—*British and Foreign Medico-Chirurgical Review*, January, 1853, from *Archives Générales*, tom. xxix. & xxx.

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23. *New Researches in Hæmatology.*—In our last No., p. 215, will be found the conclusions drawn by MM. Becquerel and Rodier from their examinations into the changes produced in the blood in various diseased states, and which they presented in a memoir read before the Academy of Sciences in Paris, on May 31, 1852. We shall now present some of the details of these researches.

The diseases which come under notice in the first part of their memoir are, 1. Anæmia and chlorosis; 2. Bright's disease; 3. Dropsies which appear connected with an alteration in the blood; 4. Organic diseases of the heart; 5. Scurvy. In the second part, they propose to examine the modifications which the blood undergoes: 1, in the phlegmasia; 2, in puerperal diseases; 3, in diseases of the brain; 4, in some other acute diseases.

Anæmia and Chlorosis.—In anæmia, the specific gravity of the blood is low (average 1049.93); the red corpuscles are diminished (100.13 instead of 128); the solid constituents of the serum are not changed; the fibrine is increased (3.72 instead of 3). These results were arrived at from the examination of ten individuals. In chlorosis, the quantity of globules was found to vary, in six cases, from 45 per 100 to 109; the fibrine varied from 3.06 to 5.01; albumen was present in its normal proportions.

MM. Becquerel and Rodier lay much stress on the distinction between anæmia and chlorosis. They consider this subject under the head of: 1, causes; 2, mode of development; 3, symptoms; 4, physical signs; 5, composition of the blood; 6, progress and duration of the disease; 7, treatment. The principal distinctive features are the following:—

Chlorosis appears gradually, without apparent relation to any cause; anæmia is the immediate result of some debilitating influence. In chlorosis, nervous symptoms predominate; the skin is of a yellowish-green tint; disturbance of the catamenial function is almost always present: in anæmia, the nervous symptoms are secondary, and principally consist in debility and lassitude; perverted sensations are rare, and, when they occur, are less intense than in chlorosis; menstrual disorders may be entirely absent (putting aside anæmia resulting from uterine disease); the loss of colour in the skin is not generally accompanied by the yellowish-green tint. In chlorosis, there is often a murmur at the base of the heart, accompanying the first sound, and heard along

the aorta; this is often absent; but, in anæmia, it is always present. In chlorosis, the venous murmur is more frequent than in anæmia; and musical bruits are much less frequently heard in anæmia than in chlorosis. In chlorosis, the composition of the blood may not be materially changed; and when it is, it may not be in proportion to the symptoms: in anæmia, the change in the blood is constant, and the intensity of the symptoms is in direct relation with such change. In chlorosis, the quantity of fibrine is generally increased; in anæmia, it is diminished. Chlorosis, when left to itself, is often of long duration; anæmia tends to recovery when the cause is removed. In chlorosis, the principal indication is to give chalybeates; and the secondary indications are, to act on the mental feelings, and to attend to the influences of dwelling, aeration, and food. In anæmia, the principal indication is the removal or diminution of the cause, whenever this is possible: hygienic treatment is next in importance; while quinine and iron are less likely (except when the anæmia results from hemorrhage) to be of service than in chlorosis.

Bright's Disease.—In the acute stages (acute congestion of the kidney), MM. Becquerel and Rodier have examined the blood of fifteen persons. The quantity of albumen is diminished, more so as the disease advances; and the specific gravity of the blood decreases in proportion. The extractive and fatty matters are somewhat increased; milky serum was found in two of the cases. This state of the serum they believe not to be due to fat, but to a peculiar condition of the albumen.

In the treatment, general and local bleeding were employed successfully in most of the cases; diuretics are hurtful, by increasing the renal congestion. Vapour-baths seem useful in removing the consecutive dropsy; and cinchona, with a nitrogenous diet, will give strength to the impoverished serum. Chalybeates are perfectly useless.

In the chronic form of Bright's disease, the specific gravity of the blood is lowered from 1060 to 1045.6; the red corpuscles are also diminished; while the fibrine is increased: the albumen is much diminished.

Dropsies.—These may depend either on obstacles to the circulation, in which case, there is no necessary change in the blood; or they may arise from a diminution of albumen in the blood. The latter form may be divided into two groups, *cachectic dropsies*, arising from Bright's disease, insufficient food, long-continued losses of blood, as from hæmorrhoids, and chronic diarrhœa, cancerous cachexia, and paludal cachexia; and *acute dropsies*, as from suddenly suppressed menstruation, scarlatina, prolonged chills, sleeping on the ground, etc.

In the treatment of cachectic dropsy, the first indication is to remove the cause, when possible. Hemorrhages, fluxes, and diarrhœa may be arrested, or even cured; want of food may be repaired; privations and unhealthy dwellings may be remedied. But in some cases, the removal of the cause is more difficult; for instance, in paludal cachexia, the patient must be withdrawn from the malarious influence, and its effects must be counteracted. Sometimes the cause of the dropsy cannot be removed, as when hemorrhage depends on an organic disease—cancer, for instance.

Cinchona in various forms, and bitter tonics, especially gentian, are most useful; iron is also indicated when there is much loss of colour, and when there are vascular bruits, or when analysis has directly shown a diminution of red particles in the blood. The use of tonics must be continued for some time. Stimulant frictions may be employed; they tend to favour the absorption of the effused fluid in the subcutaneous cellular tissue. If it becomes necessary to treat the dropsy in a direct manner, purgatives are too debilitating; diuretics are not trustworthy: but vapour-baths may be had recourse to with benefit. The hygienic treatment consists in a generous diet, warm clothing, moderate exercise, and habitation in a mild climate. In acute dropsy, if albumen be found in the urine, and there are febrile symptoms, general bleeding almost always reduces the quantity of albumen, and arrests the course of the dropsy. The application of leeches or cupping-glasses to the region of the kidneys is also sometimes of service. To remove the dropsy, purgatives may be used with less inconvenience than in the cachectic form; but dry vapour-baths are preferable. Diuretics are objectionable; stimulant frictions may be employed with

benefit. To raise the quantity of albumen, cinchona and bitters are often useful; but, as the diminution of albumen is not so great as in cachectic dropsies, the proper employment of hygienic measures is almost always sufficient to bring it back to its normal proportion.—*Gaz. Méd. de Paris*, June, 1852.

24. *Coexistence of Cancer and Tubercle.*—Drs. JENNER and BRINTON, in a report made to the Pathological Society of London, made the following references to pathological authorities to show the compatibility of cancer and tubercle. Seven undoubted cases in which these deposits were found conjoined in the same subject are published by Dr. Walshe. Dr. Hughes Bennett has not seen or heard of a well-authenticated case in which recent tubercle and cancer were associated; but he observes, that "instances are common where individuals have tubercles in youth, and cancer in adult age." In 153 bodies affected with cancer, Lebert found 17 whose organs exhibited tubercle associated therewith. The same author has published in "Virchow's Archives," for the present year, among other cases of cancer, one in which colloid cancer of the pylorus and tubercles of the lungs were coexistent. Lebert seems to believe that tubercle may be developed in individuals already suffering from cancer, but he has met with no instance in which cancer supervened during the progress of phthisis. On the other hand, Rokitansky considers that cancer is more likely to follow tubercle than tubercle to follow cancer. He doubts whether the two deposits have any more relation to one another than that of coincidence. But he states that suppurating cancer is sometimes accompanied by a whitish, glutinous tubercle, which he regards as tuberculous disease of the already cancerous fibrine.

At the same meeting, Dr. JENNER brought before the Society a case in which he believed medullary cancer and tubercle were present together in the lungs. The patient from whom the specimens were taken was a man in the middle period of life, who had died under the care of Dr. Hall Davis. Encephaloid disease was found springing from the bones of the head and in the lungs. Gray tubercle also existed in the apex of one lung. Dr. Hall Davis, Dr. Walshe, Dr. Bright, and Dr. Jenner himself, entertained no doubt, after a careful inspection of the morbid parts, that cancer and tubercle were really coexistent in this instance. Dr. Jenner was alone responsible for the microscopic appearances. He found, in the lung, cells characteristic of medullary cancer, and in other parts the compound granular cell described by Lebert as distinctive of tubercle. He had brought down these microscopic specimens, so that the members might form their own judgment respecting them.—*Med. Times and Gaz.* Nov. 13, 1852.

25. *Relation between Hysteria and Phthisis.*—Dr. T. THOMPSON read before the Medical Society of London a paper on this subject, the object of which was to show first, that hysteria often simulated phthisis; secondly, that it tended to aggravate certain symptoms of incipient consumption; thirdly, that as phthisis becomes established, hysterical symptoms grow less characteristic and various, and finally disappear; fourthly, that when the two diatheses coexist, both the prognosis and treatment must be modified. The author suggested some points of distinction between the true and the simulated forms of phthisis, especially the peculiar barking cough in the latter; the relative disparity between the local and general symptoms; the inconsistency of the loquacious complaints which the patient uttered, with an indifferent or sprightly countenance; the pain under the left mamma; sensitiveness of the skin, especially over the sternum and between the shoulders, and a sense of impending suffocation when pressure was made on these two points simultaneously. Hæmoptysis was in the early periods of phthisis often increased, and might, indeed, be altogether induced by hysteria without the existence of tubercle. Under such circumstances, it not unfrequently recurred at fixed periods both of the day and night. The profuse discharge of blood which occasionally attended hysterical hæmoptysis, might be due partly to sudden congestion, and partly to a diminution of the components of the crassamentum in the blood. Dr. Thompson believed that hysterical congestion sometimes occurred to such an extent in the lungs,

as to occasion evident dulness on percussion; but such a sign was not stationary, like phthisical dulness, but apt to vary from one side to another. The author suggested that local congestions occurred in these cases in consequence of the incessant attention directed by the patient to the lungs or other organs, which probably disturbed their functions; and a continued state of expectancy for morbid action (as in the instance of cramp) tends to its renewal. Dr. Thompson related several cases in support of his statements. In one, pseudo-phthisis was brought on by mental disquietude, and was rapidly benefited by change of scene. A second was troubled with incessant cough, and had profuse hæmoptysis, occurring at stated periods of the night. A long time elapsed before these symptoms yielded to treatment, yet the grounds for suspecting phthisis were extremely slight. In a third case, the respiration was accelerated to 70 in a minute, with difficult and painful inspiration. This symptom, however, soon yielded to remedies calculated to invigorate the nervous system and relieve spinal irritation, although certain local signs, such as the family history, and the appearance of the gums, naturally excited apprehensions as to the ultimate result. The fourth case was that of a young woman who had been for nearly five years subject to varied hysterical symptoms, gastrodynia, palpitation, and cough. Dulness was detected on percussion, which shifted from one side to the other. Gradually, however, the hysterical symptoms disappeared, and the indications of pulmonary affection were fixed to one side, although considerable advantage was derived from the administration of cod-liver oil and other treatment. Dr. Thompson concluded his communication by remarking—1st. That when phthisis commences in hysterical subjects, the symptoms are often aggravated to an extent disproportioned to the amount of organic change. 2dly. That hysteria and phthisis, although not incompatible, are uncongenial; so that, as the latter disease advances, the former usually retreats; and that the coexistence of hysterical symptoms, especially if severe, may encourage a somewhat hopeful prognosis, even when phthisis is established. 3dly. That when these two disorders are concurrent, a more "hardening system may commonly be adopted than is expedient in cases of unmodified consumption."—*Med. Times and Gaz.* Nov. 13, 1852.

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26. *On the Relations of Vaccination and Inoculation to Smallpox.*—Dr. Waller Lewis read a highly interesting and valuable paper on this subject before the Epidemiological Society. The following are some of the questions raised by this paper that well deserve further elucidation, and which would have received it by the author, had he not been prevented by his wish to make the communication as practical as possible, and his desire to leave time for discussion of the principles he brought forward. Does vaccination act as a protective or a mitigator of any other disease than variola—measles, for instance?—Is it a law that revaccination is effective in the ratio of the distance of time from the previous vaccination? Can a systematic supply of fresh vaccine virus be kept up by artificially inoculating cows? What are the advantages of such lymph, if it can be obtained, over the often-transmitted lymph? What is the influence of sanitary conditions on smallpox? How is epidemic smallpox affected by the co-presence of another epidemic—cholera, for instance? Does variola ever arise from any other cause than contagion? Is it ever formed *de novo*, as from malaria, noxious and putrescent gases, or by the aid of these or similar causes? Can variola lie dormant in a constitution a period of six months or more? Does the disease in dogs, termed distemper, constitute the analogue of smallpox?

"The object of the paper (said the author) is to endeavour to deduce some general laws respecting smallpox and vaccination, that may pave the way for clearing up some of the apparent mysteries and incongruities that now surround these subjects. As one of the members of your Committee that has been for some time engaged in preparing a report on these two subjects, some thousands of letters have passed through my hands. Many of these letters contain histories of remarkable cases that have been attended by practitioners, not only in this country, but throughout the world; and many contain the results of their experience of the disease. In the foreign correspondence that has taken

place between myself, as one of your foreign correspondents, and the Ambassadors, Ministers, Syndics, Sanitary Boards, and Medical Academies of nearly every portion of the civilized world, many interesting and important particulars have been gleaned, which, although they could not have been extracted and thrown into the Report of the Committee without making it too ponderous and bulky, have been made use of when they have served to illustrate a position or to fortify a practical deduction. Some other cases have been sketched, which, without tending directly to develop a law, are interesting as furnishing subjects for further inquiry. In a large portion of this paper the language is my own, but, in some instances, the cases are taken *verbatim et literatim* from the correspondents' own letters. This will account for the provincialisms to be met with occasionally." We commence by giving two or three cases that show the efficacy of vaccination: "The father of a family obstinately refused to have his children vaccinated. He had three daughters by his former wife, four by his present one. The eldest of the second family had been vaccinated without his knowledge; the others he had forbidden. All the children of both families took smallpox, except the one child that had been vaccinated clandestinely." "Three children, A, B, and C, the daughters of Mrs. S., who had hitherto refused to have her children vaccinated, were exposed to smallpox, owing to a sister being brought home while labouring under it. I had only enough lymph to vaccinate A fully and B partly; C was left to take her chance. A took vaccinia perfectly, and entirely escaped smallpox; B took imperfectly, and had the disease mildly. C took the disease fully." "I attended a case of smallpox in a cottage where there were two unvaccinated children, the parents not approving of the practice. As a personal favour, I was allowed to vaccinate one of them. Vaccinia was perfectly developed, and saved that child; the other had a most severe attack of smallpox." The author continued: "I believe I may say, both from my own experience and the innumerable cases that have come before me as a member of your Smallpox and Vaccination Committee, that the most certain way of taking smallpox is by medical students dissecting smallpox subjects. A very large proportion of those medical men who have taken smallpox after vaccination have had the disease from this cause. The following case will furnish a very powerful proof of the protective power of vaccination, even against exposure in that way: 'Upon commencing my hospital studies at St. Bartholomew's, in 1829, I took part in the dissection of seventeen smallpox bodies. Previous to commencing upon them I was revaccinated, but without effect. I then, without fear, began dissection. The third subject was an extremely bad confluent case, and scarcely cold. Whilst making the first incisions through the integuments, with the scalpel literally dripping with matter, I wounded the index finger of the left hand, regardless of which I continued dissecting during that and the following day. I felt indisposed in the afternoon of the second day, passed a very restless night, followed by one day's severe fever. Over the seat of the wound a single pustule of modified smallpox appeared. After this I had not the slightest inconvenience, and went through much exposure to smallpox with safety.'"

Vaccination more protective than Inoculation.—"Some years ago Miss M. G.—married a tradesman in London. She had been vaccinated when a child, but ineffectually. About a month after her marriage, she fell ill with confluent smallpox. During the attack, her husband and a young sister were constantly with her. These had been vaccinated when children. On being called to the case, I advised the husband to be revaccinated, and I took away the younger sister, sending in her place an elder one who had been inoculated. The father, an aged man, who had also been inoculated, went also, and remained with his daughter till she died. The result was this: The husband, who, in his anxiety, neglected to be revaccinated, escaped the disease notwithstanding. The younger sister was slightly indisposed for a few days, but had no eruption. The two who had been inoculated, viz., the father and elder sister, both had smallpox eruption and fever." The Doctor then read several cases in which vaccination had been protective from smallpox, where a previous attack of smallpox had failed to be so.

Measles rendered milder by Vaccination.—"Joler has described an epidemic of measles that took place in the Retzat Circle, in Bavaria, in the district where he himself resided. He says that the disease was much milder among the vaccinated than among the unvaccinated. 15 in 52 died among the non-vaccinated, while barely 1 in 300 died among the vaccinated, showing that measles was 86 times more fatal among the former than the latter." Examples of careless imperfect vaccination were then dwelt on, and the author stated that his opinion was clear and decided on the point, that where well-marked normal cicatrices were not left, the operation should be accounted a failure, and repeated, although he owned that this was not entertained by many practitioners in this country and Germany. Vaccinating from revaccinated persons, from those who had been inoculated, and from such as had previously had smallpox, was strongly denounced, as vaccinia must be extremely modified in such cases. The author added: "When we interest ourselves strongly in the propagation of vaccination, we must guard ourselves from furnishing arms to its adversaries. And is it not furnishing them with arms to employ a virus of which we are not certain?" A most interesting collection of cases was then read, in which smallpox had attacked the same individual three or four times; among others, the following, that had come under the author's own attention was narrated: "Robert D., a tradesman living in North Audley-street, had smallpox the first time at the time of his birth, his mother suffering from it at her confinement. He was attacked with the disease a second time when a boy at school, between nine and ten years of age. When eighteen years of age, he took it for the third time from his sister, who died of it. All the attacks were severe, but the last the most so. He lost his hair and his nails, and the skin of his feet; he was blind for several days, and his life was despaired of. However, he is still alive, and not much disfigured. He was never vaccinated nor inoculated. I believe, if again exposed to the disease, he will take it again." Cases were then adduced, to show that several members of the same family appear sometimes to show great susceptibility to take the disease. The following curious case of smallpox in the lower animals was then adduced, the author adding, that any similar well-attested cases would be very valuable additions to the facts collected by the Society on this subject. "The following case was related to me by a lady of rank, on whose veracity I can place the greatest reliance. Some years ago, just after her confinement, she was seized with smallpox. It became necessary to have her breasts drawn, and, as no child could be obtained, recourse was had to a puppy, which answered the purpose. At the usual time the puppy sickened, and had the disease known by the name of the 'distemper.' It is said that vaccination, when successfully performed on puppies, will almost to a certainty prove a prophylactic against distemper." Then followed some interesting cases of individuals who could be neither vaccinated nor inoculated. The last cases adduced were of individuals who appeared to have perfect immunity from smallpox. "I have detailed the case of Robert D., who evidently possesses a strong innate susceptibility to the action of the smallpox virus, as shown in his having already taken the disease three several times. I have now to draw your attention to a case the most directly opposite to this. Strangely enough, it is that of his own brother Thomas. From the elder brother Robert, as well as a sister, having taken smallpox, the parents believed that all their children must take the disease, and refused to have the subject of this case vaccinated or inoculated. He was accordingly exposed when a child to the contagion, lying in the same room with his sister, while she was suffering from the disease, as well as waiting on his brother in his second and third attacks. Although since that time he has been several times exposed to the contagion, he has never felt the slightest ill effects from it." "Examples of persons possessing a natural immunity from the disease are rather numerous. Dr. Jackson, of Philadelphia, saw a man at the Smallpox Hospital, engaged in laying out and burying the dead, who had never had an attack of the disease. He had been frequently inoculated and vaccinated, but always unsuccessfully. Van Swieten speaks of a physician, seventy years of age, who had practised through numerous epidemics of the disease, but had never taken it. Diemerbroeck states that immunity from

smallpox was a privilege of his family. It was possessed, he asserts, by his grandfather, grandmother, his father, and himself." The author drew the following deductions from the cases adduced:—

1. That vaccination is a most eminent protection against smallpox.
2. That when perfectly performed it is almost, and, in some instances, more protective, than inoculation or smallpox itself.
3. That it appears to render some exanthemata, *e. g.* measles, milder than they would have been otherwise.
4. That neither vaccination, inoculation, nor smallpox, guarantees the individual, in every instance, from smallpox.
5. That smallpox attacks some persons three times, or oftener.
6. That there exist certain individuals who have perfect immunity from vaccination, inoculation, and smallpox.
7. That great susceptibility to, or perfect immunity from, smallpox, is sometimes found to be common to several members of the same family.
8. That sanitary conditions have a very powerful effect on the spread of smallpox in common with other epidemics.

Conclusions.—The author thus terminated his most interesting communication: "It appears, from the foregoing cases and the deductions therefrom, that the laws that regulate the apparent mysteries of smallpox are as follow:—

"A. Smallpox is a disease to which almost every person is liable once in his lifetime unless protected.

"B. But there is a small fraction of the community who appear to enjoy an exemption from this law; no degree of exposure, either to vaccination, inoculation, or casual smallpox, causing them to take vaccinia or variola.

"C. That there is a certain portion, on the other hand, who are, unfortunately, in the exactly opposite condition. These individuals, whose systems appear to present a soil peculiarly favourable to the development and spread of smallpox virus, are eminently susceptible of the disease. It is to this class that belong those persons who have repeated attacks of variola, who take smallpox after being inoculated or vaccinated. I believe that for such persons there is no safety but in repeated vaccination.

"D. And, lastly, that between this latter class and that favoured portion of the community that possess perfect immunity, there exists every shade and degree of susceptibility.

"These laws explain the apparent inconsistency respecting the protective powers of vaccination. In this view, all those individuals, forming an enormous majority of mankind, who possess an ordinary moderate degree of liability to smallpox, are completely guarded against the activity of smallpox virus either by perfect vaccination, inoculation, or smallpox; while others, who have a much greater susceptibility, will neither be protected by one or other of these expedients."—*Med. Times and Gazette*, Jan. 15, 1853.

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27. *On the Use of Collodion in Smallpox and Erysipelas.* By Dr. Christen, Assistant Physician to the Prague General Hospital.—It has long been a desideratum in medical practice to prevent, if possible, especially in females, the scars usually left by smallpox on the face and on other exposed parts of the body. To this end the most dissimilar means have been tried and recommended, and have been again, in course of time, laid aside, as at least useless, if not directly injurious.

Very recently, it was thought that a preservative, capable of meeting all requirements, had been found in collodion. Nor was this agent long without receiving its share of commendation. Although many considerations occurred *à priori* to the mind against its use, it could not be directly condemned, in opposition to the testimonials in its favour, without repeated and extensive trials of its efficacy in cases of various intensity. The never-failing cases of variola in the Prague General Hospital, which were particularly numerous in the month of May, afforded sufficient opportunity of testing the value of collodion in many points of view.

The collodion was in most cases employed in the stage of papular development (stippchenbildung), the earliest period when, in general, the diagnosis of

variola could be made with certainty. It was applied over a greater or less extent of the face and extremities, and in two cases the entire face was smeared with it. The results were as follows: As the collodion dried and shrank, the redness of the papulæ diminished, the slight œdema of the skin disappeared, and the covered and adjoining parts became tense. With the progressive development of the pustules, and the accompanying increase of infiltration of the skin in their immediate neighbourhood, this tension became intolerable, especially in those cases in which the entire face was covered, and so annoyed the patients that means had to be taken, before the termination of the variola, for the partial or complete removal of the collodion. The further development of the variola was neither prevented nor lessened, but only modified, by the papulæ under the layer of collodion forming even points of pus, which, as the suppurative process advanced, became confluent, and in severe cases formed a nearly uninterrupted layer. The evaporation of the liquid parts was so impeded that fluid pus was still found under the collodion, when the pustules on the other parts of the body had dried and crusted.

In those cases in which the collodion had to be partially or entirely removed on account of the intolerable tension, capillary extravasations took place soon after the pressure was removed, in the form of numerous ecchymoses under the epidermis, loosed from the corroded corium, which soon assumed a dark colour, and gave the patients a still more repulsive appearance. The suppuration had, as a natural consequence of the prolonged retention of the pus in the fluid state, spread more broadly and deeply; the scars, instead of being prevented as was intended, were more extensive and deeper, and were plainly perceptible even in those lighter cases, in which the surrounding parts, which had not been smeared with the collodion, presented scarcely a trace of a cicatrix.

The collodion also appeared, especially when extensively applied, to exercise an unfavourable influence on the general course of the disease. That it must, by suppressing the function of the skin, have an absolutely injurious effect when its application is general, and uninterruptedly kept up, is, according to physiological laws and our experience of the operation of analogous influences on the human organism, as clear as possible. But the arrest of evaporation, and the great extent of matter under the covering of collodion, appear to be of still greater importance, promoting as it does in a great degree the absorption of the pus, and favouring extremely that state of pyæmia which is so apt to occur when the eruption is extensive.

From the foregoing observations, thus briefly related, the employment of collodion in smallpox consequently appears to be not merely useless, but also directly injurious and inadmissible. In mild cases of variola, from which the favourable results that have been recorded appear to be derived, its use is superfluous, and, in severe cases, with extensive eruption, from which our present conclusions have been chiefly drawn, it is absolutely prejudicial and objectionable.

As to the influence of collodion on the course of *erysipelas*, the cases I have observed justify the following remarks: In symptomatic erysipelas, depending on internal causes, its effects appear at first to be very surprising; the redness disappears; the swelling and pain become less, and a feeling of tension and numbness occurs in the parts which have been smeared with the collodion; nevertheless, the general phenomena, and the complications which may be present, continue unaltered, and in a short time, sometimes only a few minutes, the erysipelas commences to pursue its course unchecked, in the neighbouring or in distant parts of the body, even when the repeated application of the collodion follows closely on its track. The effect then is, like the remedy itself, merely local and transient. Collodion fulfils the indication as little as other means of demarcation which have been recommended; as, for example, cauterization with nitrate of silver or with acids, inunctions with mercurial ointment, &c. Facts, apparently of an opposite nature, in my opinion probably refer to cases in which the collodion was applied at a time when the process was about to terminate, or where, without its employment, the erysipelas would not have advanced further.

The employment of collodion appears to be more useful in erysipelas arising from local causes. In erysipelatous wounds, ulcers, slight burns, erysipelas from insolation, and similar cases, its use is decidedly advantageous. Although I have not had the opportunity of making many observations on this part of the subject, I will briefly communicate the results I have obtained. The immediate effect is the same as in symptomatic erysipelas; the redness, swelling, pain, and vesication rapidly disappear, and depots of pus do not so readily form. In a case of gangrenous erysipelas of both eyelids, the repeated and tolerably extensive use of collodion on the surrounding parts, after the gangrene was arrested and the greater part of the gangrenous portion had separated, speedily removed the infiltration of the edges and a burrowing abscess, as slight as could well be expected in that situation. In a case of erysipelas with very considerable vesication on the backs of both hands, and reaching to the wrist-joint, the consequence of severe insolation, the collodion was, for the sake of comparison, abundantly applied to one hand, while the other was merely treated with cold fomentations. On the application of the collodion the pain immediately ceased, and was replaced by a feeling of numbness and stiffness. The diffused vesicles and the very considerable œdema rapidly subsided, and the course of the disease was thereby much shortened; while the vesication on the other hand increased in size and extent, and when emptied filled again, the œdema subsided but very gradually, and the pain was very much aggravated by the exposure of the corium. On the fifth day after the patient's admission into hospital, the hand which had been treated with collodion, and in the intervals with cold applications, had regained its normal volume. The pain, œdema, and blisters had disappeared, and nothing remained but a slight stiffness of the hand and a parchment-like dryness of the epidermis, while the other hand was, so late as the tenth day, considerably swollen and painful. In the instances I have mentioned, and in slight burns, the use of the collodion has proved of decided advantage, and it deserves to be recommended in similar cases.—*Vierteljahrschrift für die praktische Heilkunde*, Band 4, 1852. Originalaufsätze, p. 92.

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28. *On the Application of Gutta-Percha in the Treatment of Diseases of the Skin.* By Robt. J. Graves, M. D.—"When a wound or injury inflicted on any portion of the surface has exposed the structures naturally covered by the skin, immediate irritation is the consequence, and this never entirely ceases until nature has been able to provide some substitute for the abraded or otherwise destroyed integument. The manner in which the denuded surface is covered with a temporary protection, sufficient to guard it against the contact of the air and other external injurious agents, varies according to the circumstances of the case: in many instances blood coagulated on the wound adheres firmly and remains in contact with every point, until the reparative efforts have healed the parts and covered them again with a new skin. When such a process takes place favourably, this most simple of all dressings effects a cure without any external discharge or inflammation, and enables the parts to be reformed, or, as the late Professor Macartney termed it, remodelled *by the first intention.*

"Of late years, surgeons have derived much advantage from the use of different imitations of this natural process, and have employed at first solutions of collodion, and finally gutta-percha dissolved in chloroform, for this purpose. Reflecting upon the great superiority of this method over the others formerly used, it struck me forcibly that it was capable of a much more general extension, and that the chloroform solution of gutta-percha might be usefully employed in the topical treatment of cutaneous affections. The more I thought on this subject, the more sanguine I became that this new agent would form a useful addition to the list of remedies employed in combating a class of diseases confessedly so obstinate and so difficult of cure. The result of repeated trials, I am happy to announce, has not disappointed my anticipations, and consequently I now feel myself called on to lay before the profession a statement of those cases in which this application has either effected a cure, or mainly contributed to the successful treatment of the complaint.

"When the saturated solution of gutta-percha in chloroform is spread by

means of a camel's-hair pencil over a portion of the skin, the solvent fluid rapidly evaporates, leaving a delicate and extremely thin pellicle of gutta-percha firmly adhering to the part. The peculiar toughness of gutta-percha prevents this pellicle from being brittle, and therefore it is much less liable than collodion to crack and fall off in small scales. On the forehead or face, where it is not affected by friction of the clothes, it remains firmly attached for five or six days, or even longer, but on other portions of the surface it is often rubbed off much sooner; over dry eruptions of the skin it lasts longer than over those which are moist, and over smooth and firm spots, of course longer than over those covered with rough morbid scales, or loosely adhering crusts. Before the application of this solution, therefore, the practitioner will do well to render the portions of the cutaneous disease to which he intends to apply it as free as possible from crusts or scales, by means of poultices, alkaline lotions, &c. When this precaution is taken, he will find that the artificial cuticle which he has applied with his brush will in certain cases act most sensibly on the subjacent disease, diminishing inflammation and its consequences, and powerfully contributing to the restoration of the healthy structure of the skin.

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"The transparency of this artificial membrane enables us to watch the progress of the subjacent diseased skin, and its colourless nature prevents it from disfiguring the face when the eruption occupies that part. Its perfect cleanliness, too, is no small advantage, and affords a very agreeable contrast when compared with the usual ointments, &c.

"My observations confirm what reasoning on this subject would lead us to expect, that this application is more suited for dry, scaly, tubercular, and chronic diseases of the skin, than for acute affections attended with much oozing of fluid and comparatively active inflammation.

"Still, its good effects are by no means limited to chronic diseases of the skin, or to those of a scaly, dry nature; for, as will hereafter appear, I have seen it decidedly useful in the spreading form of impetigo. My experience of this remedy makes me very anxious to witness its application in the first stages of erysipelas, as analogy leads me to hope for good results in such cases.

"Of course, the patient must aid the efforts of the physician, and must, as far as possible, abstain from everything which tends to rub off or injure the artificial cuticle; for its virtue ceases when its continuity is broken and the external air finds admission to any part of the diseased surface.

"Early in the month of November, 1851, I was called to visit Mrs. C., from ——. She was about 50 years old, full and plethoric; the mother of a large family, and, until the disease of which she then complained of commenced, generally healthy. About two years before, she observed small spots of impetigo on her limbs and body, which succeeded each other, some healing while fresh ones appeared. During summer, she was nearly free from them; but last autumn they returned with greater virulence than ever, and have since increased both in size and numbers, some being larger than the hand, and attended with constant oozing of fluid, which imperfectly coagulates, forming loose and thin crusts. The itching at night is intolerable, and nearly deprives her altogether of sleep. I employed the usual general and topical treatment for a fortnight, with alleviation of her sufferings, when luckily I thought of trying the saturated solution of gutta-percha in chloroform, and had it carefully applied by Mr. Nicholls, of Dawson Street, at first by way of trial, to one of the smaller spots, and on the following days to each of the larger patches of eruption in succession. The relief obtained was such that it appeared almost incredible both to the patient and her family. Her cure was accomplished in less than three weeks; for, dreading the sudden stopping of so great a discharge and so much cutaneous irritation, I proceeded cautiously, and, towards the end of the cure, when she returned home, I directed an issue to be inserted in her arm, as a measure of precaution. She has continued well up to the present time (11th April, 1852).

"In this patient we were at first obliged to reapply the gutta-percha every second day, as it was rapidly detached and broken up into large flakes by the discharge from the subjacent surface. Its healing influence, however, speedily

diminished the diseased secretion, and then the artificial cuticle remained longer adherent, and it was not necessary so often to use the scissors for the purpose of cutting off the loose portions of gutta-percha membrane previously to applying a fresh layer. I ought to have remarked that the camel's-hair brush should be plunged, the moment it has been used, into hot water, to prevent it from being consolidated by the coagulated gutta-percha.

"This case caused a great sensation among my patient's friends and relatives, and many were the inquiries made relative to my method of cure. I must confess that my own astonishment at the result was not less than theirs.

"Since that time I have repeatedly used this application in *acne of the face*, in which disease each of the pimples should be covered with the solution, and the patient enjoined not to rub off the pellicle by washing, &c.

"In some, this treatment alone causes a material and rapid diminution of this tormenting eruption; and, by perseverance in this plan, there is every appearance in two of my patients that the tendency to throw out the pimples is gradually ceasing.

"Finally, in several cases of psoriasis, I have applied this solution with great benefit. In this disease, much care must be taken to prevent the application being rubbed off by the clothes, and no woollen stockings or rough garment of any sort should be allowed next the skin. I had the satisfaction of curing in a fortnight a chronic psoriasis of the back of the hands and arms in a lady, who had been under homœopathic treatment for six months, without deriving the least advantage from the infinitesimal doses prescribed by the practitioner.

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"My anticipation respecting the utility of an artificial cuticle applied over the parts affected by commencing erysipelas has, I find, been verified, as appears from the following paragraph, taken from Dr. Neligan's able *Treatise on Diseases of the Skin:*—[1]

"'Acting as an impermeable varnish, and probably producing some effect, also, by the compression it causes, collodion has been successfully employed by Spengler and Rapp, as a local application in erysipelas. The parts are thickly coated with it by means of a camel's-hair pencil; and it is renewed as often as may be required, in consequence of its cracking and peeling off when dry.'

"When my friend Dr. Stokes heard of my success in other cases, he resolved to try the gutta-percha solution in smallpox, and it gives me great pleasure to say, the result of two trials is most encouraging, and leads us to hope that at length the means of preventing the formation of disfiguring scars on the face in that disease has been discovered.[2]

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"In communicating these cases, Dr. Stokes observed, as worthy of notice, and probably connected with the beneficial result produced, that the most remarkable effect of the gutta-percha was to keep the face constantly moist, and to prevent the formation of hard, irritating crusts. He also mentioned to me a singular illustration of the effects of total exclusion of air from the cutaneous surface, as a preventive of the eruption in smallpox. It was that of a man, who, while in the Heath Hospital, for a scrofulous enlargement of the knee-joint, was attacked with this disease; the knee had been previously tightly strapped with adhesive plaster, and on the disappearance of the eruption, it was seen, on removing the strapping, that not a single pustule had been developed on the parts which were thus covered.

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"I shall conclude with observing that, in psoriasis and other chronic cutaneous complaints unattended with any constitutional derangement, it is of the greatest consequence to check the growth of each new spot. This the gutta-

[1] Page 48.

[2] It is of great importance, and essential to the success of this treatment, to observe that the *gutta-percha* solution should not be applied to the face until the pustules are fully maturated, or even begin to exhibit the first appearance of collapse, as indicated by the well-known central depression on the apex. Applied then, the solution is of the greatest service; *applied before maturation, it is mischievous.*

percha does most effectually in psoriasis, and when applied daily to any recent points of irritation, it smothers, as it were, each nascent centre of future blotches."—*Dublin Quarterly Journ. of Med. Sci.* June, 1852.

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29. *Chlorate of Potash in Ulcerative Stomatitis and Cancrum Oris.*—Dr. J. H. BABINGTON states (*Dublin Quarterly Journal*, Feb. 1853) that, in an epidemic of ulcerative stomatitis which occurred in the Coleraine Union Workhouse, in 1849, he used the chlorate of potash with great success. The treatment adopted was a mild aperient of rhubarb and magnesia, and the administration of chlorate of potash, dissolved in water, sweetened with syrup, in doses of four grains every fourth hour; the mouth was also washed with a weak lotion of solution of chloride of soda. They all recovered in about six days. Dr. B. treated one case with alteratives and tonics, and it was three weeks before it got quite well; thereby proving the efficacy of the chlorate of potash.

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30. *Delirium Tremens treated by the Internal Administration of Chloroform.*—Dr. JAMES F. DUNCAN records (*Dublin Medical Press*, February 16, 1853) a case of delirium tremens successfully treated by the internal administration of chloroform, as first recommended by our correspondent, Dr. Pratt, of Baltimore.

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31. *Suppurative Derivation as a Therapeutic Agent.*—Dr. HUGHES WILLSHIRE, in a very interesting paper on this subject, read before the Medical Society, London (Dec. 11, 1852), expressed his belief that the use of setons, issues, &c., was not only far less than formerly, but far less than it ought to be, considering the undoubted value of these agents in the alleviation of many disorders. He then passed in review those circumstances which led to the belief that very considerable effect may be exerted upon the deeper-seated tissues, &c., of the body, and consequently upon the functional and lesional aberrations constituting many internal disorders, by natural or artificial derivation to the surface of the frame. It was then shown how, in early periods of the medical art, and in times not long before our own, this belief was practically acted upon, and the important share that "suppurative derivation" was made to assume as a therapeutic agent. Its employment, however, he considered, was getting greatly out of fashion, and he thought that the introduction of anæsthetic agents tended to diminish still further its use, as both the public and the profession were of course the more and more inclined to the adoption alone of what he might term "a painless therapeutic." The author then alluded to several important maladies, in which he regarded the use of setons, issues, &c., as often of very great avail. He particularly mentioned phthisis, in its early stages; epilepsy, in certain of its forms; hypertrophy of the brain, with chronic cerebral congestion in children, &c. Of course, "suppurative derivation," in whatever form induced, could have but slight effect over general systemic aberrations from health, dyscrasies, cachexies, and so on; but he considered that it often excited a very powerful one over the local stasis, &c., in the minute vessels and tissues of visceral and deep-seated parts. In these, the systemic affection often made known its first and sometimes most severe recognizable "manifestations," and which of themselves reacted detrimentally, even fatally, in a sort of reflex way, as it were, upon the frame. At any rate, whatever views might be adopted as to the *modus operandi* of the form of treatment he was discussing, he believed that, practically, it would be found, under its appropriate indications, to be one of those valuable and effective methods of palliation or cure we should not so willingly allow to be forgotten, as we are doing in the progress we are making in some of the departments of clinical medicine. After a pretty full consideration of the physiologic and other reasons for our trust in it, and its practical illustration by references to cases so treated, the author concluded his paper with some remarks on what he designated as the "minor surgery of the matter."—*Lancet*, Dec. 18, 1852.

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32. *Electrified Oxygen, or Ozone, in the Treatment of Albuminuria.*—At the meeting of the Academy of Sciences in Paris, on January 17, M. ROBIN made a communication, with the view of showing that electrified oxygen, or ozone,

mixed with air, might be of advantage in the treatment of albuminuria, by favouring combustion.

The author said that, at the time when his researches and those of others showed the extreme importance of slow combustion in the maintenance of the vital phenomena, other experiments had pointed out ozone as much more appropriate for maintaining combustion than oxygen obtained by the ordinary chemical processes. Hence ozone, either pure or mixed with air, would be a valuable agent in cases of asphyxia, in scrofula, in cases of poisoning in general, and in all circumstances where it is either desired to support the powers or to stimulate combustion when reduced below its normal standard, or especially as a reanimating agent in cases where air and ordinary oxygen are found of no service.

Electrified oxygen is easily obtained by the decomposition of water by the galvanic pile. It may be mixed with air, by causing a current to flow into the tube through which the oxygen is inhaled.

Two birds were rendered insensible; one was then introduced into ordinary oxygen, the other into pure ozone. The one which was introduced into the ozone recovered more rapidly, but manifested much agitation; while the other recovered quietly.—*Association Medical Journal*, Jan. 28, 1853.

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33. *Therapeutic Uses of the Bark, Leaves, Seeds, and Root of the common Ash* (*Fraxinus Excelsior*).—In a work recently published by Dr. Otterbourg,[1] some interesting remarks are made upon the use of the *leaves* of the ash in gout and rheumatism. It appears, that since these leaves were introduced into the *materia medica* of Germany in 1841, by Rademacher, they have enjoyed a very considerable reputation for remedial powers in the diseases just named. Apparently in ignorance of the therapeutic reputation which ash leaves had obtained in Germany, two French physicians, Drs. Pouget and Peyraud, published a paper in the *Union Médicale* for Nov. 27, 1852, in which they detail various cases of gout and rheumatism cured by the ash-leaves; and among the cases of gout described is that of one of the authors, Dr. Peyraud. The value of the *bark* of the ash is of older date, and is better known. A few remarks, founded upon the works referred to, and upon information gleaned from other sources, may be useful to many of our readers, who, in hospitals, dispensary, or union practice, may be often glad to be able to substitute cheap and indigenous remedies for costly drugs, whenever equal advantages can be obtained from the former.

The bark of the *fraxinus excelsior* is bitter and astringent. Its febrifuge action is undoubted; and, so long ago as 1712, it received the name of European cinchona. It has been employed in the form of tincture, decoction, infusion, and powder. The dose is rather larger than of the corresponding preparations of cinchona. The infusion is as good a form as can be adopted. We may remark that the retail price of the bark, in Covent Garden Market, is two-pence per ounce.

The leaves are said by some to be purgative; by others, they are declared to have no such effect. From their general similarity of appearance, they are sometimes substituted by the druggist for senna leaves. The London seed-vendors generally have a supply of ash-leaves, but they inform us that they are seldom asked for, and that they do not know the therapeutic virtues on account of which their customers purchase them. We believe that an investigation of the medicinal properties of ash-leaves would, if properly conducted, yield some useful results; for, in various parts of this and other countries, they now are and long have been used successfully in various traditional nostrums.

In 1842, Dr. Peyraud had his first attack of gout, which was severe, and lasted for twenty-five days. During the three following years, the attacks increased in frequency and severity. Having derived little benefit from the remedial means which he had resorted to, he listened to the suggestion of one of his patients, an inhabitant of the department of Dordogne in France, who advised him to try an infusion of ash-leaves, informing him, at the same time,

[1] Aperçu Historique sur la Médecine Contemporaine de l'Allemagne. Paris, 1852.

that his forefathers had been cured by this prescription, and that many of the country people got rid of "their pains" by employing it. Dr. Peyraud took the infusion of ash-leaves, and from 1845 to 1849 had no fit of gout. He then had an attack, which yielded in five days to the infusion of ash-leaves, used under the observation of Dr. Pouget. These circumstances recalled to the recollection of Dr. Pouget a fact which he might otherwise never again have considered. It was this: that when he was a physician at Soréze, in 1824, the peasants of that place had spoken to him of the great power which an infusion of ash-leaves had in driving away pains. He afterwards discovered that it had been used forty years ago as a gout specific by the peasants of Auvergne.

A commercial traveller, who had been gouty for twenty years, and had saturated himself with the syrup of Boubée and other vaunted specifics, consulted Dr. Pouget. At this time he was an almost constant prisoner in his room with successive attacks. After eleven days' use of the infusion, he was able to walk two kilomètres (one and a quarter English mile); in fifteen days he resumed his journeys, and was able to travel without suffering, by diligence, from Bordeaux to Quimper.

Several other cases are detailed, some of them acute, and others chronic. Articular rheumatism, in numerous instances, was also benefited by the infusion of ash-leaves.

Drs. Pouget and Peyraud thus sum up their opinions as to its efficacy and mode of administration:—

"The powder (infused) of ash-leaves is perhaps a true specific for gout and rheumatism; combining with the most powerful curative action, the immense advantage of giving rise to no dangers nor inconveniences, such as result from the use of colchicum. Having no purgative properties, it may be taken in any condition of the digestive canal. It causes neither nausea, sickness, general discomfort, nor depression. Experience enables us to state, that generally, under its use, at the end of four or five days, and sometimes sooner, the pain, redness, and swelling have sensibly diminished in intensity, or have even disappeared."

The method of administration is thus minutely described:—

1. Each dose of the powdered leaves ought to be infused for three hours in boiling water.

2. Before this infusion is taken, it requires to be sweetened to taste, and strained through a linen cloth.

3. In acute gout, and especially at the commencement of the attack (whether with or without fever), two doses of the powder ought to be infused in three cups of water; one to be taken at bedtime; the second, early in the morning; and the third between breakfast and dinner. The medicine, in diminished doses, requires to be continued for eight days after the symptoms have disappeared.

4. In chronic gout, a cup of infusion ought to be taken night and morning, for a long period. Fits of gout may be more or less indefinitely postponed by having recourse to this treatment, say for eight or ten days in every month.

5. In acute rheumatism, the infusion greatly assists the action of other medicines which are commonly used; and it is particularly beneficial in removing articular smellings. It produces equally good results in chronic rheumatism, whether articular, muscular, or nervous.

6. During the use of the remedy, it is not necessary in any way to change the mode of living, nor to adopt any special regimen, so long as the laws of sound hygienics are observed.

Speaking of the dose and method of administration, Dr. Otterbourg says: "Several times during the day, thirty-two grammes of ash-leaves may be taken, infused in a sufficient quantity of hot water. In muscular pains, and in rheumatism of the scalp, this is an excellent means of cure."

From various works, we have gleaned the following notes regarding the bark, leaves, seeds, and root.

Pliny ascribes numerous medicinal virtues to ash-leaves, and speaks of them as a specific for the bites of serpents (lib. vii. c. 13). Bouregard, a surgeon of Rochelle (*Anc. Journ. de Méd.* vi. 233), and others, have cited cases from their

own practice in corroboration of this statement. Willich and others speak of the tonic properties of ash-leaves. Pélétin and Gilibert recommend them in scrofula. Tablet, in 1711, declared them to be equally purgative as senna leaves, but less liable to cause griping. Coste and Willemot found them less aperient than senna leaves, one-third more being required as a dose. They state, that the evacuations were sooner completed, and that, along with their purgative properties, they have a diuretic action. Hooper, in his *Medical Dictionary*, has the following notice: "The bark, when fresh, has a moderately strong bitterish taste. It possesses resolvent and diuretic qualities, and has been successfully administered in the cure of intermittents. The seeds are occasionally exhibited as diuretics, in the dose of a drachm." The vermifuge action of the bark is mentioned by several authors, and Bergius says, "Sunt qui multum sperant de cortice fraxini, in lacte vel aqua cocto, adversus vermes, atque etiam contendunt, hunc corticem sæpe vermes pepulisse, ubi alia fefellerunt." (*Tomus* ii. p. 832. *Stockholmiæ*, 1778.) According to Martin-Solon, the decoction of the root is purgative and emetic. (*Bul. Gén. de Thérap.* i. 163.) Mérat and De Lens, in the *Dict. de Matière Médicale*, give the fullest notice which we have seen of the medicinal properties of the different parts of the ash. At the end of their article, the following authorities are cited: Schroer (J. C.) Description du Frêne avec l'Enumération de ses Propriétés Médicales (en Allemand), etc. Francfort-sur-l'Oder: 1700, in 8. Helvig (G.) Diss. de Quinquinâ Europæorum, sive Cortice Fraxini. Grypswaldiæ: 1712, in 4. Schreger (B. N. G.) Diss. de Corticis Fraxini Excelsioris Naturâ et Viribus Medicis. Lipsiæ: 1794, in 4. There is no reference to fraxinus excelsior in Woodville's *Medical Botany;* and Decandolle, Richard, Stephenson, Churchill, Duncan, and Pereira, make no mention of its medicinal properties.

Additional information is obviously required regarding the medicinal properties of the bark and leaves of the common ash. Can any of our readers contribute towards supplying this deficiency? Under certain circumstances, the leaves, it appears, are purgative, and in others astringent; this, and various points connected with the physiological effects produced on different organs, evidently demand experimental elucidation. The discrepancy of opinion among observers may be explained by the experiments having been made with leaves gathered at different seasons. Mérat (*Dict. de Mat. Méd.*) advises that the leaves be gathered when in full vigour, and carefully dried for winter use; but in summer they may be used green.—*Assoc. Med. Journ.* Jan. 7, 1853.

34. *On Tympanitis as a Special Symptom of Disease.*—Dr. Henry Kennedy read a paper on this subject before the Dublin Obstetrical Society. He divided the subject into the acute and chronic forms; and detailed a case of the latter occurring in a man, where a tumour in the abdomen from this cause was supposed to arise from organic disease. This tumour suddenly disappeared while the patient was in a bath.

He then entered at some length into the consideration of what he termed acute tympanitis, and showed that the presence of this sign, which could be so easily detected, was of much consequence in the treatment of all those diseases in which it occurred. Dr. Kennedy especially alluded to fever, erysipelas, diffuse inflammation, and puerperal fever; and at some length he proved that when it occurred in any one of these diseases, the proper line of treatment was the stimulant plan, to the exclusion of all bloodletting, and even mercury. In conclusion, he drew attention to a recent paper in Guy's *Hospital Reports*, where a series of *fatal* cases of puerperal fever were given, and in every one of which no other treatment but local bleedings with calomel and opium was used. He thought this sameness of treatment was one which might very fairly be called in question, and the results in the cases given spoke for themselves.—*Dublin Quarterly Journal*, February, 1853.

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

35. *The Particulars of two Cases of Popliteal Aneurism treated by Compression, with some General Observations on that Plan of Treatment.*—By BENJAMIN PHILLIPS, F. R. S., Surgeon to the Westminster Hospital.—[It is well known to our readers that the treatment of aneurism by compression has been strongly advocated by the ablest surgeons in Dublin, while Mr. Syme and some of his contemporaries of Edinburgh denounce it, and claim superiority for the ligature. The London surgeons, though tardy in trying compression, seem to have become favourable to it; and since their attention was particularly drawn to it by Mr. Bellingham, during his visit to London last year, they have been induced to make more frequent trials of it. The following interesting cases, read before the Royal Medico-Chirurgical Society of London (Jan. 11), with the discussion to which it gave rise, will show the present state of opinion in London in regard to the subject. Though the report is a long one, the importance of the subject, we conceive, justifies our giving it entire.]

The author states that his objects in laying this paper before the Society are to procure a permanent record of perhaps a unique case—one of popliteal aneurism on each side in a female—and to obtain a deliberate consideration by the Society of the treatment of aneurism by compression. As a proof of the necessity for further deliberation on this subject, he refers to the different estimate of the general applicability of the remedy in Dublin, London, and Edinburgh. The author alludes to the want of some tribunal before which important questions should be brought and discussed, as is done in the Academy of Medicine at Paris, where a subject such as the present would be referred to a committee to report upon, and a discussion would take place on the report.

CASE I. Catherine C——, aged thirty-nine, a market-woman, tall and gaunt, was admitted into the Westminster Hospital on December 3, 1851, with a pulsating tumour in the right popliteal space. She had observed a stiffness about the right knee about two months before admission. She followed her occupation, and carried heavy loads on her head; but gradually the part became more painful, especially after her day's work. Three weeks before her admission, in getting into a cart the limb was stretched, and she felt something give way in the ham. The pain suddenly increased, and in two days extended to the ankle. Her habits of life were unfavourable; she was a confirmed gin-drinker, and she laboured under great nervous excitement and apprehension. The heart's action was most tumultuous, but no signs of disease could be detected along the course of the large internal vessels. There was a pulsating tumour in each popliteal space. That on the right side commenced in Hunter's canal, a little above the point where the artery enters into the popliteal space, and extended beyond the middle of that space. It could not be emptied by any amount of pressure. The tumour on the left side was situated lower down in the popliteal space; was smaller, and with less violent pulsation. The treatment was at first directed to her general condition: it consisted of a moderate diet, with abstinence from fluids; ice and ice-cold water were applied to the tumour. Under this plan she improved; and at the end of a fortnight it was determined to try the effects of moderate pressure on the side of the larger tumour. From her alarm at the sight of an instrument invented by the author, it was thought prudent to commence proceedings by means of a simple ring tourniquet, the pad being fixed near the apex of Scarpa's triangle. It was screwed tight enough to cause the pulsations to become imperceptible to the touch. At the end of two hours, the pain was so great that it became necessary to remove the pressure; and in place of the tourniquet a Signorini's compressor was applied at the groin. It slipped, however, after nearly three hours, but was reapplied for the night; but in the morning it was found to have slipped again. During the day and night, moderate pressure was kept up by means of the ring-tourniquet, the situation of which was altered from time to time, and this was continued during the suc-

ceeding day. The pulsation of the tumour had evidently lessened, the knee looked shining, and the leg was slightly œdematous. During the night, the author's compressor was used. Pressure was continued during the following day and night; the ring-tourniquet was used, and with slight intervals the pressure was continued for seven days longer, when the tumour was carefully examined; it felt more solid, and no whiz could be detected when all pressure was removed. The pressure was more or less steadily applied for twelve days more. At this time there was more fulness about the knee and ham; no whiz could be heard; but there was a general elevation of the mass, synchronous with the heart. After two days' interval, pressure was again applied, and continued at intervals for eleven days. It was believed, however, that the treatment had failed, and that the aneurism had become diffused; and, as a last chance, ligature was applied. She died on the seventeenth day after the operation; and, on examination, a clot was found extending from the ligature to the aneurism. The posterior ligament of the knee-joint was ulcerated, and the cavity of the joint contained sanguineo-purulent fluid. The aneurism in the left side appeared to consist of a fusiform dilatation of the artery, and contained concentric laminæ of coagulated blood. There was a large aortic aneurism commencing below the origin of the cœliac axis. The aorta, and many other arteries, presented extensive fatty degeneration.

Case II. George S——, aged thirty-one, a navigator, admitted July 8, with a popliteal aneurism of the size of a turkey's egg. It had begun six months before, from a strain. Six weeks after this, he observed a "knot" in the bend of the knee, which gradually increased to its present size. His health is good, and the circulating system tranquil. The characters of aneurism were very marked, and when firm pressure was applied on the artery, at the groin, the tumour disappeared. It was found that he had been treated by compression at the Reading Hospital, and the author was furnished with particulars of the case by Mr. Bulley; from which it appeared that pressure was applied for three weeks, by which the tumour became less, and lost its elastic feel. It was noticed that at night, when the pressure was entirely removed, the pulsation ceased; but that when it was reapplied the pulsation returned. Obstructive pressure was now applied for some time, but the man became impatient, and refused to allow any treatment. He was consequently discharged.

Although it appeared that a fair trial had been made, yet the author was induced to repeat the compression, and Dr. Carte saw the case, and aided the author with his instrument. The author here proceeds to describe the instrument. It was applied the 14th of July, and no pulsation could be detected in the tumour, which was completely emptied. The kind of pressure was varied, as well as the situation. In three days, it was noticed that the tumour could no longer be emptied, and that it contained coagula. The pressure was now continued; and, on the ninth day, the tumour was quite firm, and there was no pulsation in it. Since that time he has remained quite well.

After commenting on the different effects noticed at the Reading Hospital, and under his own treatment, the author adverts to the fact that authorities are still found in opposition to the treatment of aneurism by compression. It must, however, be judged of by its results; and if it be shown that more cases are cured by it than by ligature, it will ultimately be preferred. Mr. Syme's statement that he has tied the femoral twenty times without bad results, does not agree with the experience of this operation in the hands of others; and it appears, by reference to cases, that the failures amount to between one-third and one-fourth of the whole. The treatment by compression is far more favourable, its failures not exceeding one-fifth of the whole; and even when it fails the patient's life may be saved. The question, whether there are any objections to this mode of treatment so serious as to make the surgeon hesitate to employ it, is answered by the author in the negative; and he objects to Mr. Syme's description of the time employed and the pain to be endured under it, as not a fair statement of the case. He admits that cases have occurred where great suffering has attended the treatment by compression, but conceives that this is unnecessary, and is not the common result. It originated in a mistaken notion that it was necessary to stop the current of blood entirely, in order to effect a

cure. Mr. Todd did not think excessive pressure necessary; but those who followed him for some time acted on the opinion that what the ligature does must be done by compression. But it has been proved that an aneurism may be cured although the whole supply of blood be not completely cut off, even when the ligature has been used. The author maintains, then, that the surgeon is justified in adjusting the pressure to the enduring powers of the patient, rather than to the almost complete extinction of pulsation in the sac, provided the pressure be sufficient to produce a decided diminution in the force of the pulsation. As to the most eligible point for applying the pressure, he thinks it should be where it can be best borne, and where it occasions the smallest amount of inconvenience; and he does not think it of consequence that the pressure should be applied above the profunda. It is important, however, that the return of blood by the veins should be as little as possible interfered with, and for this reason he believes that the immediate neighbourhood of Poupart's ligament is the most desirable situation, while, at the same time, a smaller amount of pressure is necessary at that point. The author maintains that the pressure should be applied gradually, and not suddenly, so as to admit of the enlargement of the collateral vessels; and he thinks it is clearly established that continuous pressure is not absolutely necessary. The author sums up by saying that he is justified in asserting that pressure should be applied at points where it can be best borne, provided it be not too far removed from the sac; that, if possible, it should be so applied as not to prevent the return of venous blood; that it should be strong enough to produce a sensible influence on the strength of the pulsation in the tumour; and that it may be intermitted to a sufficient extent to make the treatment tolerable to the patient.

36. *Case of Popliteal Aneurism cured by Compression of the Femoral Artery at its Upper Third.*—By J. Monro, M.D., Battalion Surgeon, Coldstream Guards. —This case, the author observes, is interesting from the fact which it proves, that a smaller amount of pressure than was formerly thought necessary will suffice for the cure of the disease. This being established, the chief difficulty in the steady application of pressure, the pain caused by it, is much lessened, the effects resulting from the undeveloped state of the anastomosing vessels are avoided, and a safer plan of treatment pursued, more especially when the tendency to arterial disease elsewhere in these cases is considered.

Drummer W. K——, aged twenty-three, of a spare and delicate habit of body, walked to the hospital on the 19th April, 1852. He complained of severe pain in the calf of the left leg, which was swollen, and the veins were dilated. Five days before, while playing at cricket, he was suddenly seized with pain, which obliged him to desist. He imagined he had met with a sprain. Although still suffering, he continued his duty; but to-day, being unable to go on any longer, he had come to the hospital. A large tumour, pulsating synchronously with the heart, was found to occupy the popliteal space. It was partially emptied by pressure, and returned to its former dimensions when that was removed. It expanded in every direction, and the bellows sound was heard. No other disease of the femoral or other artery was detected. The chest was free from disease, and the heart's action regular. He had suffered from time to time from slight catarrh and febrile attacks. He had been treated five times for venereal sores, but on one occasion only had taken mercury, and then but for ten or twelve days. After a little preparatory treatment, Mr. Phillips's instrument was applied, at first over the brim of the pelvis. The pressure could be borne only an hour and a half; it caused severe pain and feverishness. Believing that this arose in great measure from nervousness, the author employed manual pressure a little below the origin of the profunda. This was effected by the aid of several intelligent convalescents. The artery was compressed only to such a degree as to allow a feeble pulsation in the sac. For the first three days, this plan was followed for eight hours only during the day. The patient did not complain at all. There was no feverishness, nor increased œdema of the leg. The clamp tourniquet was now employed, but was removed each night; finding that it was well borne, it was kept on at night also from the 26th. On the 3d of May, the sac had become harder and smaller, the

articular arteries more developed, and the œdema of the calf less. On the 6th, the sac ceased to pulsate, and the tourniquet was removed. From this date the absorption of the contents of the sac went on rapidly, and he began to regain the use of his limb. In a short time, the measurement round the limb diminished from sixteen inches and a quarter to fourteen inches and one-third; the femoral artery was pervious. On the 2d July, he was dismissed to his duty, which he continued to do well till the beginning of November. Before that time his general health seemed worse. On the 19th November, he was again admitted, and an aneurism of the aorta was found near the cœliac axis. He complained of great pain in the loins and abdomen, coldness and numbness of the legs, faintness and nausea. On the 9th December, he seemed to be fast sinking, and died on the following day.

On *post-mortem* examination, the heart was found of usual size—somewhat flabby on the right side, but the texture sound; valves healthy; no disease of lining membrane; the aorta sound to the situation of the cœliac axis, between which and the superior mesenteric a rupture of its coats was found, and openings communicating with a large sac, of recent formation, and filled with coagula. It had burst in two places, and several pounds of blood were found in the cavity of the abdomen. The aneurismal limb was injected; the femoral and popliteal arteries were of natural size and pervious, until opposite the centre of the popliteal space; femoral vein pervious and healthy; the profunda and its branches enlarged; slight thickening all that remained of the sac; popliteal artery obliterated down to its division into the tibial arteries; popliteal vein also obliterated; the anterior tibial artery enlarged; the posterior of usual size; the peroneal larger than usual; muscular branches large; the ramus anastomoticus magnus three times its usual size, its branches anastomosing with the inferior articular recurrent tibial, and with each other. Two superior articular and an azygos, given off by a common trunk, just previous to the remains of the sac, anastomosed freely with the recurrent tibial and peroneal.

The recurrent tibial was as large as the radial, and anastomosed freely with the articulars and plexus in the peroneal nerve; a tortuous plexus in the substance of the popliteal and peroneal nerves, united below with a recurrent branch from the anterior and posterior tibial behind the head of the fibula; another branch from the azygos communicated with the recurrent branches behind the head of the fibula.

The communication between the external and internal articular was effected by branches three times their natural size; that between the anastomotica magna and inferior articular, between the recurrent tibial and superior articular by large branches.

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37. *Discussion at the Royal Medical and Chirurgical Society relative to the Treatment of Aneurism by Pressure.*—The PRESIDENT, Mr. HODGSON, said that he quite agreed with Mr. Phillips in the opinion which he had expressed in his paper, that the treatment of aneurism by compression had not obtained that attention in England which its importance deserved, and which it had obtained in Ireland. The cause of this was probably the want of success which had followed this treatment in some cases in which it had been employed in this country; and the cause of this want of success he believed to have been a want of acquaintance with the true principles upon which this procedure produces the cure of the disease. It had been supposed that the pressure should be applied with sufficient force to place the sides of the artery at a distance from the disease in actual contact, so as to cause the obliteration of its cavity by the adhesive process, and thus to place it and the disease in the same condition as when a ligature is applied to an artery in the Hunterian operation for the cure of aneurism. Such, however, was not the case; for in four instances in which the parts had been examined after death, and in which aneurisms in the lower extremity had been cured by pressure—three of which he had had the opportunity of inspecting, it was found that the artery at the part to which the pressure had been applied exhibited no change from its normal condition. In these instances the artery, throughout its whole course to the seat of the aneurism, retained its natural caliber; there were no vestiges of inflammation in any

of its textures, nor in the surrounding parts; there was no adhesion of its sides, no plug, no contraction of its canal, and, in short, no appearance of its having been subjected to any kind of treatment. In some of these specimens, the aneurismal sac and the artery in the ham were filled with coagulum; in others, the sac only was filled with coagulum, and the circulation went on in the natural course of the artery. In Dr. Monro's case, which he had examined, the aneurism and the artery in the ham were obliterated; but above, where the pressure was applied, the artery was pervious and quite in its healthy condition. It was clear, therefore, from these facts, that the cure was not effected, at least in these instances, by producing adhesion between its sides and obliteration of the artery at the point where the pressure was applied. By what process, then, did compression cause the cure of the disease as effectually as the ligature of the vessel at a distance from the aneurism? From the recorded cases, especially from that communicated this evening by Dr. Monro, it was evident that moderate, but not "obstructive pressure," was that which was required. How did this act upon the artery? In addition to the three proper coats, which formerly were regarded as constituting an artery, modern histologists have demonstrated another texture, composing the inner portion of the middle or elastic coat, and, of course, situated between this elastic and the inner coats. In this texture resides the vital contractility of the vessel. Now, it appears that when an artery is subjected to any irritation, this vital contractility is brought into action. When an artery is torn, or violently stretched and elongated, or exposed to a chemical irritant, it is by the agency of this vital contractility that its caliber is diminished; and in extreme cases this sometimes happens to such an extent that its area even becomes completely closed. Compression is one of the agents by which this power may be brought into action, and he believed that it was in this manner that long-continued moderate pressure produced such a diminution in the volume of the stream passing through the main artery to the disease, if not the entire suppression of the current, as to cause those changes to take place in the aneurismal sac by which the cure of aneurism is effected, when a ligature is applied at a distance from the tumour. In his opinion, it was very important to keep this principle in view in adopting the means of treatment by compression; because, by a moderate degree of long-continued pressure, we should produce all the good effects required, whilst great pressure would produce great suffering, which could be borne, if at all, with extreme difficulty, and often with most injurious effects upon the parts to which it is applied. Ample experience had now proved that long-continued moderate pressure was all that was required to bring about the cure of the disease, and not such a degree of violent pressure as would mechanically prevent the flow of blood through the vessel. The latter idea had, he believed, caused the failure of this practice in many instances in which it had been employed; whilst in others, by causing sloughing, and inflammation, and obstruction in the great venous trunks, and serious engorgement of the limb, its continuance was from necessity abandoned. Many years ago, he had been engaged in some experiments on animals, in which attempts were made to procure the obliteration of arteries by powerful local pressure. In very few instances could this be accomplished; the sufferings which it produced were excessive, and generally it caused inflammation of the veins, and most injurious effects upon the surrounding parts. The President concluded by expressing a hope that some of the gentlemen present would give their views on the subject of compression.

Mr. Fergusson, after a pause, rose and said that the circumstance of no one rising to address the meeting could not be from any want of interest in the subject, and he regretted that an older fellow than himself did not take the lead. He thought it a pity that so important a question should for the second time be passed over almost in silence in that Society, particularly after the interesting papers which had been read on the subject. The subject of compression in the treatment of aneurism was now attracting attention over the civilized world; and the surgeons in Dublin, Edinburgh, and elsewhere, where the plan had attracted much attention, naturally looked with some anxiety to what might fall from fellows of that Society upon the subject. He thought the surgeons present ought to give their opinion upon it. He (Mr. Fergusson) begged

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leave to say that he accorded with the views of the Dublin surgeons in advocating the employment of pressure in such a way that, if it were general, would soon save any necessity for discussion upon it; for they not only brought forward arguments in its favour, but proofs, sufficient, in his opinion, to settle the matter. Thus, forty or fifty cases had been recorded by the well-known names of Tuffnell, Bellingham, &c., out of which only three or four had been unsuccessful. Now, in noticing the treatment of aneurism by ligature lately, he had occasion to state that, out of one hundred cases, sixteen had gone wrong. This fact alone was sufficient to show that compression should occupy the attention of every surgeon. In his opinion, the propriety of the operation, with respect to the lower extremity, was settled; but its applicability to the upper extremity involved a different question, for we could not apply compression there with the facility with which we could in the lower limbs. He thought Mr. Phillips and Dr. Monro entitled to something more than the usual form of thanks of the Society for their communications. It was worthy of note that, in Dr. Monro's case, pressure was kept up, under the surgeon's care, by that best of all compressors, the hand, for the space of three days; and this, he had no doubt, had had much influence on the favourable termination of the case. From his own (Mr. Fergusson's) experience of compression, and from the history of cases, he believed that both surgeons and patients were apt to despair too soon, and at a time when they should be full of hope and confidence. In one case, recorded by Mr. Phillips, this was well illustrated, Mr. Phillips having persevered with success, after another surgeon had given up the case in despair. He (Mr. Fergusson) had seen a case which had been under treatment for nine weeks, without apparently making any progress whatever; but symptoms of cure soon after manifested themselves, and success was ultimately complete. Mr. Hodgson had, in his remarks, raised one or two nice points for discussion. One was a suggestion thrown out with respect to pressure on the contractile coat of the artery. Now, without denying the influence claimed for it by so distinguished an authority as the President, he (Mr. Fergusson) should fancy that more depended really upon the pressure itself than on the influence of the contractile coat. Now, pressure would obstruct the current of blood about one-third, more or less; yet the pulsations would continue; that amount of pressure quieted the circulation, and to this more than to anything else he attributed the cure. In calling to mind some points in Dr. Monro's case, he recollected that the caliber of the artery, from the upper part of the superficial femoral to the popliteal, was fully as great as in health. This was a fact in favour of the cure being effected by pressure only. Another proof was the circumstance that all the compression necessary was that which would impede, but not completely obstruct the circulation. The same thing might take place in respect to a ligature, and it was only due to Mr. Wardrop to say that he had been the first to show that it was not necessary to entirely obstruct the circulation through the aneurism, but only to diminish it to such an extent as would give rise to the deposition of fibrine.

Dr. J. A. Wilson said: "When, in cases of popliteal aneurism, long-continued pressure of the femoral artery has been successfully employed, I should hesitate to explain the diminution of caliber in the compressed vessel by the hypothesis of an increased contractile energy in the artery at the part where compression has been made. I am inclined to consider such result as the effect of an impaired state of the general nutrition and special function of the arterial tube, under the disturbing influence of the long-continued pressure. Under this process of artificial structure, the close, active normal relation of the artery with its contained blood is no longer maintained, and the consequences of such altered relation in the blood's current are of necessity first experienced in the aneurismal sac; subsequently, it may be in a prejudice and partial interruption of the circulation through the smaller arterial divisions of the limb. On this view of the effect of long-continued pressure of the healthy upper arterial structure, in bringing about obliteration of the aneurismal sac, or prevention of its further development, the blood-current in contact with the compressed vessel is considered only a secondary agent in the change. From such violent interference with the complicated arterial functions, an effect necessarily fol-

lows on the force and volume of the blood's current through the compressed tube, with, as I believe, an incipient prejudice to the composition and delicate contractile properties of the blood itself; yet, such effect, if I am not in error, proceeds, in the first instance, from impaired nutrition and diminished contractile energy of the artery, which, however healthy and efficient in its structure and function, deteriorates, as an organ, from the first application of force by pressure to its self-adjusting tubercular cavity." He inquired the condition of the cellular tissue in Dr. Monro's cases.

Dr. Monro replied that there was no thickening of the cellular tissue external to the artery, the sheath being quite pervious.

Mr. Curling had seen compression tried in two cases, and had come to the conclusion that more depended on the instruments employed than many supposed, and that very great care and attention to the case were necessary. In one case, which had been successful, in the London Hospital, the cure was mainly attributable to the great attention which Mr. Ward had paid to the case. Unless well managed, excoriation and sloughing readily followed the application of the pressure. In one of the cases, he had seen the proceeding fail from this cause. Even with moderate and well-sustained pressure success would not always follow, particularly in instances of very stout persons. He related two cases in which, from disease of arteries, a ligature could not be applied, and compression arrested hemorrhage after amputation. He had seen one case in which pressure upon the brachial had been successfully employed.

No one else rising to address the Society, Mr. Phillips said that, before the discussion closed, he wished to make two or three observations. The object he had in view in bringing the paper forward was to determine, as far as possible, the benefits to be derived from compression; and whether we could do away with some of the inconveniences and difficulties which at present attend its employment. He could not help expressing his regret that more of the experienced surgeons present had not given their opinions upon the subject, so that it might be stamped with its true worth. He should, however, take it for granted, in the absence of any counter-statement, that compression should be continued to be employed, as at present, until further experience enabled us to arrive at a better plan, if such there was. Now, it was clear that the operation succeeded in more cases than the ligature, and that a great number of successful cases had been published. It was open to the objection, however, of being more tedious, painful, and difficult to bear than that by deligation. Now, he had wished to raise the question whether compression, applied with great care and improvement, might not be freed from that objection. He (Mr. Phillips) had set it down that a moderate degree of pressure only was necessary, and that this might be sometimes intermitted. If pressure, with this qualification, were long enough continued, success would generally attend its application. A cure could not, of course, be expected in all cases. It had failed in one of the instances related in his paper, in which the artery had given way in front. The Dublin surgeons said the operation always failed in such cases, whether ligature or compression were the means employed. He (Mr. Phillips) did not know on what grounds they formed this opinion; but, in his own case, the joint had been injured by the arterial disease. But was it always so in these cases? These exceptional instances, however, did not militate against the value of the operation as a general remedy. He had, therefore, now come to the conclusion that the smallest amount of pressure which would interrupt the flow of blood through the artery, kept up for a sufficient length of time, with occasional intermissions, would be well borne, and would cure aneurism.—*Lancet*, Jan. 22 and 29, 1853.

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38. *Popliteal Aneurism cured in a short time by Compression of the principal Arterial Trunk.*—William G——, aged fifty-seven years, and a carpenter by trade, was admitted, Nov. 15, 1852, into Luke ward, under the care of Mr. Cock. The patient has exerted himself as much as is usual in his calling, but never imposed more fatigue on the right leg than the left. He is of high stature, robust, has always enjoyed good health, and been particularly temperate in his habits. He is of a quiet, contented disposition, and possesses an average

amount of intelligence. The man is married, has many children, and does not remember having injured either leg in the slightest degree; nor did the affection ever exist in the family. Three months before admission, the patient's right thigh and leg pained him much for a few days, and he was under the impression that the pain was seated in the bone. This attack did not last long, and the patient soon thought no more of it, until one month afterwards, when he noticed a little lump in the popliteal space, of the size of a plum. Pulsations were then distinct, but much fainter than they subsequently became. No actual pain was experienced, but the tumour for the next two months became gradually larger, though the patient was never prevented from walking as usual, going even great distances without inconvenience.

On admission, the patient's state was the following: There is a strongly pulsating tumour, partly in the right popliteal space, and partly lower down towards the gastrocnemius muscle. The swelling begins above, in the popliteal space, opposite to the upper border of the patella and ends below, on a level with the tubercle of the tibia. The tumour is round, and about the size of a turkey's egg; it pulsates strongly, and presents, on auscultation, a strong bruit. The chest, on careful exploration, does not yield any evidence of thoracic aneurism. The tumour feels yielding and elastic, and the hand placed upon it receives a sensation as if the vessel were dilated more towards the inner than the outer side.

Mr. Cock, after considering all the symptoms of the case, and giving due regard to the constitution, health, temper, &c. of the patient, resolved to give compression a fair trial, and used a clamp lately modified by Mr. Bigg, to which the latter has given the name of "Bigg's aneurismal compressor." The instrument may be described as follows:—

A semicircle of steel, with anterior and posterior movable arms, the anterior containing the screw and pad to rest on the artery, the posterior holding the hinged cushion or splint, on which the limb is placed. When the instrument is applied, the pad is screwed down so as to *gently* compress the artery. The centre screw is then turned to direct the pad inwards, and fix the artery between it and the bone. The lower screw, placed beneath the cushion, raises the outer edge of the splint, and prevents the instrument moving in the slightest degree. The advantage of this instrument seemed to us to consist principally in giving the pad a direction inwards towards the bone and in completely securing the limb by a good broad splint, which may, by a screw placed beneath it, be brought in closer contact with the thigh.

Mr. Cock expressed himself greatly pleased with the manner in which this clamp acted all through the case.

The compression was begun Nov. 24, and regularly continued to Dec. 10, making just sixteen days. The pulsations ceased five days before the apparatus was completely left off; but it was thought advisable to continue the pressure, so as to insure the due establishment of the collateral circulation. The tumour was on the day of the patient's discharge (Dec. 22, 1852, thirty-seven days after admission) just half its original bulk, and presenting a great degree of hardness. The pressure was kept up with great regularity and patience during the whole of the above-mentioned period; the weight at the groin being substituted for the clamp when the latter was getting too irksome. The patient slept very little for a whole week, as he was anxious to keep up the pressure in the most exact manner; and he was fully rewarded for his close adherence to Mr. Cock's directions, by the speedy solidification of the sac and obliteration of the artery.

When the apparatus had been completely removed, the leg was tightly and evenly secured by a roller; and when the patient first attempted to walk, he felt the leg rather weak, but all pain in the limb had quite disappeared. He finally left the hospital Dec. 22, 1852, with the tumour quite solid, and the complete obliteration of the artery.

This is certainly a most satisfactory result of compression in the treatment of aneurism, and likely to make a lasting impression on all those surgeons who saw the case. Of course, the patient may be looked upon as a very favourable subject for this kind of treatment; but it is very likely that, even with nervous and irritable patients, a course of sedative medicines, and proper warning that

the success depends on perfect obedience and perseverance, would very probably have a beneficial effect, and facilitate the successful application of compression.—*Lancet*, Jan. 8, 1853.

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39. *Case of large Axillary Aneurism, in which the Subclavian Artery was successfully Tied.*—Barnard Holt, Esq., read the following interesting case before the Royal Medical and Chirurgical Society (Jan. 25, 1853).

Robert H——, aged thirty, was admitted into the Westminster Hospital, May 23, 1851, with an axillary tumour, apparently fungoid. Five weeks previously he felt slight pain in the right axilla, and detected a small, hard, and apparently glandular swelling. He consulted Mr. James, of Uxbridge, who diagnosed the case to be abscess, and treated it accordingly. After a week, he was admitted into the Uxbridge Union, under the care of Mr. Rayner, who took a similar view of the case. The tumour had now increased, the patient complained of throbbing pain, and he had had two or three distinct rigors. Seven days after admission the tumour was much enlarged, and the skin discoloured; and these symptoms having increased, Mr. Rayner, at the solicitation of the patient, punctured the tumour with a lancet, when a small quantity of blood only escaped. A suspicion was now entertained that the case might be one of aneurism; but on consultation, as no further evidence in favour of this view existed, it was considered that the previous opinion was correct, and the treatment was continued. Five weeks after the appearance of the tumour, profuse hemorrhage took place, but ceased before Mr. Rayner arrived. He then thought he could detect a *brouit de soufflet;* and on this being confirmed, the patient was sent to the Westminster Hospital. At this time, the patient presented an exsanguious, unhealthy, and anxious aspect; tongue clean and moist; skin warm and perspiring; eyes glassy; pulse 96, and hard; appetite bad; bowels moderately regular. The swelling was about the size of an ostrich-egg, nodulated, and communicating a spongy feeling to the touch. No fluid could be detected, but there was the elastic feeling usually accompanying malignant disease. The pain was intense and lancinating. The hand and arm were œdematous, and could not be brought to the side; movement was difficult; no bruit or pulsation could be detected. A grooved needle was introduced, but only a small quantity of grumous blood escaped. Seven days after admission, the tumour was more dense, its elasticity was nearly gone; the arm was more œdematous, and the radial beat more feebly than on the opposite side. A fortnight afterwards, the tumour was greatly enlarged, was now uniform and elastic, and an indistinct bruit and pulsation could be detected. On consultation, it was agreed that the tumour was aneurismal. The bruit and pulsation had become more distinct, and it was decided that the operation of tying the subclavian artery should be performed. On the 18th of June, the day previous to the operation, the tumour had increased, the pulsations were uniform and distinct, and a moderately loud bruit could be heard all over the surface; the arm swollen, tense, and painful, widely separated from the side; the clavicle pushed upwards and backwards, so as to describe an obtuse angle with the sternum; the artery could be commanded by pressure above the clavicle. On the 19th, the patient being seated in a chair, the integument was drawn over the clavicle, and an incision made the whole length of and upon that bone. The skin being now permitted to resume its original position, the incision, of between four and five inches in length, was situated immediately above the clavicle. The deep cervical fascia was cautiously divided to the same extent. On careful dissection of the cellular tissue, the brachial plexus was exposed. A branch being mistaken for the artery was raised on the needle, but as pressure on it did not command the circulation, the artery was again sought for, which was felt feebly beating under the plexus of nerves, which lay in front and covered it. A ligature was put round it, and the circulation completely commanded. The patient now suddenly became very faint, and his breathing embarrassed; he was laid on the floor, and water dashed on his face, when he soon recovered. No unfavourable symptoms ensued after the operation. On the 8th of July the ligature came away. At this time the tumour had decreased one-half, and a feeble pulsation could for the first time be detected in the radial

artery. A few days afterwards, the tumour was somewhat large, and as it did not again decrease, the diet was reduced and ice applied. From that time the tumour gradually diminished. On the 24th of December, the tumour was so far reduced as to admit of his return to the country; he could move his arm nearly as easily as the other, and the œdema had entirely subsided.

The author then remarks on the difficulties sometimes experienced in forming a correct diagnosis between fungoid and aneurismal tumours. In the present case the tumour had at first been taken for abscess; and it was not until the hemorrhage took place that its aneurismal character was suspected. When first seen by the author, the sac was again so distended as to mask the previous signs; and the history and appearance of the tumour favoured the idea of its malignancy, which was, however, contradicted by the subsequent improvement in the health of the patient, and the slow increase in the tumour. The size was remarkable, measuring nine inches and a half from the clavicle to the centre of the axillary portion of the tumour, and five inches from the arm to the side of the chest. The surrounding structures were materially displaced, and the clavicle elevated, thus deepening the space between the integument and the artery, and apparently offering a serious obstacle to the facility of placing a ligature on it; indeed, when the parts had nearly resumed their normal relation, the cicatrix more resembled that arising from ligature of the carotid, than of the subclavian.—*Lancet*, Feb. 5, 1853.

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40. *Suggestions for facilitating the Exposition of Arteries, and the Application of the Ligature.* By Wm. Hargrave, Professor of Surgery in Royal College of Surgeons, Ireland, &c.—Some practitioners will consider it a useless question to ask, and a waste of letterpress to print, what is the best direction to be given to the incisions required for securing an artery? and, if possible, to lay down fixed principles for these operations. For some sessions past, in my lectures on operative surgery, I have always advocated and demonstrated to the class a different mode of proceeding from that laid down in books. Though so many works on surgery have issued of late from the press, this most important practical point seems to me not as yet definitively settled, as it is capable of being done, especially for the junior practitioner. The only author that I am aware of who has touched upon a change in this practice is Mr. Skey, which meets my full concurrence.

Most surgeons still cling to the rule of cutting parallel to the course of the artery, seldom or never deviating from it; and, if they do, act doubtingly and with hesitation.

From an attentive consideration of this most practical proceeding, I would lay it down as a rule that the incisions parallel to the artery generally should be the exception, while incisions transverse or oblique to the vessel should almost always be the rule. By the adoption of the latter, the surgeon will be able to find the vessel with more ease and certainty to himself, and to encircle it with the ligature with greater prospect of success to the well-doing of the operation.

I am well aware that I am not advocating a totally new proceeding in practice, as Scarpa, Dupuytren, and Guthrie have advised it in some instances; and I have performed such an operation on the left common carotid with every facility to myself. My colleague, Mr. Porter, has also occasionally deviated from this practice. This question can be best met by stating the disadvantages of making the incisions parallel to the artery: 1st. The slightest deviation from its course will lead the surgeon astray, going either to the external or to the internal side of the vessel; and unless he corrects his mistake on the instant, the operation will be tedious and unsatisfactory, calling for the use of retractors, and requiring excessive manipulations of the wound to find the vessel, and may even fail *in toto*, as has occurred more than once in practice. 2d. If two vessels happen to run parallel to each other, as often occurs in the arm, and sometimes below Poupart's ligament, more difficulty will attend their being exposed, and distinguished one from the other, than by the adoption of a different course to the incision. 3d. The operation does not appear to me to be facilitated by such a line of incision.

What advantages follow a transverse or oblique incision? 1st. No doubt exists but that the vessel will present itself in some part of the wound, and a retractor is seldom required. 2d. If two vessels run together, greater facility will attend the distinguishing of one from the other, and securing the artery which is the subject of the operation. 3d. It is an operation more generally fitted for the profession than the first one, as it does not require so much dexterity or great knowledge of anatomy. 4th. If much adipose substance exists, it will render the operation more satisfactory and certain.

It can be objected to the practice now advocated, that in some instances the muscles must be cut across. This matters but little; for, when the patient recovers, such are the compensating powers inherent in the animal economy, that no permanent injury will arise from such a lesion.

To enumerate the operations in which a transverse or oblique incision is valuable to expose an artery and to secure it, the following will prove its efficacy: 1st. The common carotid: it is only necessary to test this operation either on the dead or on the living, when the superiority of this practice will be admitted; and will permit the surgeon to insulate the artery in the readiest manner from the veins and nerves which run so close and parallel to it; in fact, a free gaping wound is the result of the section of the sterno-mastoid muscle, and all the parts at the fundus of the wound are visible; it is an operation well adapted for children,[1] and those with short necks. 2d. The occipital artery, where it is uncovered by the mastoid muscle, or in the posterior third of its course, is most readily laid bare by an incision transverse to its course, or parallel to the posterior edge of that muscle in its third stage. 3d. The external maxillary, as it passes over the ramus of the jaw, can be more readily exposed by an oblique incision than one that is made parallel to its course, and thus affords a ready facility for securing it. 4th. The lingual artery is also most effectively denuded by an incision oblique to its direction, which brings into view in their anatomical relations the digastric tendon, the lingual nerve, and then the artery; all three presenting nearly the same colour, but practically distinguished from each other by their never-varying relations. 5th. The subclavian, immediately above the clavicle, is exposed by the incision being oblique, if not transverse, to the direction of the vessel. 6th. By dividing the pectoralis major muscle across—*i. e.*, from the clavicle to the axillary border *in the course of the artery*, one of the most valuable operations in surgery is given to the profession to secure this vessel, if wounded in any part of its course, from the clavicle to the axilla, and to tie it both above and below the injury. This valuable operation is an exception to the rules now laid down, being parallel to the course of the artery. 7th. An oblique incision for exposing the humeral artery will enable the surgeon more readily to find this vessel, and to distinguish between the frequent irregularities so often found in this portion of the vascular system, and which always greatly embarrass the operator. 8th. The same line of incision will facilitate the operations for the radial and ulnar arteries. 9th. The internal mammary, if it is considered advisable to secure it, will be most expeditiously laid bare by marking well the course of the artery and cutting parallel to the ribs in the intercostal space, and dividing the superimposed structures carefully, till the artery is exposed; this proceeding affords more ease in finding the vessel, and involves less risk of wounding the costal pleura than the operation proposed by M. Goyrand, which, from his directions, makes the incision run parallel to the course of the artery; if any deviation takes place, the artery is not easily found, and more danger is incurred in wounding the pleura costalis. (*Lancette Francaise*, 1834.) 10th. The facility with which the internal epigastric artery is exposed and secured by indicating its course, and dividing the coverings placed upon it, parallel to and above Poupart's ligament; or, in other words, transverse to the course of the vessel, leaves nothing to be desired in this operation. 11th. The external iliac, either by Abernethy's or Cooper's operation, is laid bare more or less transverse to its course; while the internal one is also similarly presented to the surgeon. 12th. The gluteal artery, as it lies external to the pelvic cavity, notwithstanding the

[1] See Quart. Journ. of Med. Sci. Aug. 1849, No. xv.

great coverings it has from such thick and powerful muscles as the gluteals, can be always laid bare by attention to the following rules, which I might say are founded upon the immutable formation of the osseous system: mark the distance between the posterior-inferior spine of the ilium, and the external surface of the great trochanter, the subject having been previously placed upon the abdominal surface, the inferior extremity extended and rotated outwards, divide this space into three equal parts; at the point where the inner third meets the commencement of the middle third, the artery will be found with mathematical accuracy. Next, as to the manner for exposing it; let this point be the centre of the incision, which is to be made transverse to the course of the muscles, when the artery will be found at a great depth in a space formed superiorly by the notch of the ilium, and subtended inferiorly by the pyriformis muscle; in this operation retractors are absolutely necessary. 13th. The common femoral, if considered advisable, can be exposed and secured with great facility immediately below Poupart's ligament by an incision parallel to it, when the artery can be insulated from the vein without any disturbance to it. My colleague in the School of Surgery, Mr. Porter, has performed this operation, and reports very favourably of the facility afforded by it. 14th. Superficial femoral artery: a certain obliquity to the incision for securing this artery in the first, second, and third stages of its course, will be the means of rendering the operation more perfect, as far as the exposure of the vessel is concerned in it. 15th. The anterior tibial: to bring into view the intermuscular space, at the bottom of which this vessel descends to the foot, a line parallel to the external edge of the tibialis anticus muscle, though oblique to the axis of the limb, is parallel to the course of the artery; hence it will be found more judicious as an operative proceeding to make it a little more oblique than is usually practiced, by which a greater certainty will be had of entering the intermuscular space, and then to find the artery. 16th. The artery on the dorsum of the foot, though the tendon of the externus pollicis longus indicates very accurately the course of the vessel, yet, as it occasionally runs more external to this tendon, by giving it a slight degree of obliquity, it will not only bring us into contact with the artery, but also enable us to be prepared for this deviation from the natural course of the vessel. 17th. Popliteal artery: an oblique incision downwards and inwards will permit the operator to expose the vessel, and to insulate it better from the accompanying nerve and vein, than when parallelism of the incision to the artery is made the rule for the operation. 18th. Posterior tibial artery: as regards the middle and inferior third of the leg, the same principle in the operative proceeding, so frequently inculcated in this communication, will render the proceeding simple, safe, and in most instances, expeditious. Should the surgeon be called on to cut down on the posterior tibial artery in the upper third of its course, by making his incision oblique, though the saphena minor vein and the communicans tibialis nerve will be divided as lying in the centre of the incision, still, this lesion will be more than compensated for by the retraction of the gastrocnemius and solæus muscles, which must facilitate the exposure of the artery at so great a depth at which it lies in this situation from the surface.

In conclusion, to recapitulate the arteries on which this operation is of such utility: 1st, the temporal; 2d, the occipital in its third stage; 3d, external maxillary artery; 4th, lingual; 5th, carotid; 6th, subclavian; 7th, axillary; 8th, brachial; 9th, ulnar; 10th, radial; 11th, internal mammary; 12th, internal epigastric; 13th, external iliac artery; 14th, internal iliac artery; 15th, gluteal artery; 16th, femoral artery; 17th, popliteal artery; 18th, anterior tibial artery; 19th, posterior tibial artery; 20th, dorsalis pedis artery.—*Dublin Medical Press*, Feb. 2, 1853.

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41. *On the Solution of Urinary Calculi in Dilute Saline Solutions, at the Temperature of the Body, by the Aid of Electricity.*—Dr. H. Bence Jones recently read a paper on this subject before the Royal Society, containing the record of a number of experiments made to determine whether, out of the body, urinary calculi could be dissolved by placing them in dilute solutions of nitrate of potash and other salts, and then decomposing the solution in contact with the calculus by means of the galvanic battery. The urinary calculus was carefully

dried and weighed, then fixed between the poles of a galvanic battery, after which it was immersed in a solution of nitre, and at the end of the experiment it was redried and reweighed. The loss of weight gave the effect which was produced. The different calculi which had been used were also exhibited, showing the different degrees in which the various kinds of urinary calculi are dissolved when submitted to this treatment. The conclusions at which the author arrived may be thus stated: In a solution of nitre containing 20 grains to the ounce, kept at the temperature of the body, uric acid calculi can be dissolved by the aid of electricity, at the rate of from 2 to 9 grains an hour. The solution takes place at the alkaline or negative pole. In the same time, and under the same circumstances, phosphatic calculi can be dissolved at the rate of from 2 to 25 grains. The solution takes place at the acid or positive pole. Calculi, consisting of oxalate of lime, proved to be far less soluble, usually not more than half a grain an hour, and at most 2 grains being dissolved. At the conclusion of the reading of the paper, the author stated that he had been engaged in making further experiments with a solution of nitrate of potash containing only 10 grains to the ounce; and he exhibited some large uric acid and phosphatic calculi, which had been partially dissolved by the decomposition of this solution at the surface of the calculi. He also showed a catheter or litholyte, made by Weiss, which fulfilled the conditions requisite in an instrument for effecting the solution of urinary calculi in the body. It resembled an ordinary lithotrite, but the blades were—1st, isolated so as to conduct the electricity to the surface of the stone when it had been caught; 2dly, the external surfaces of the blades were guarded, so that in case they came in contact with the mucous membrane, no chemical action would be there set up; 3dly, a double channel for the injection of the solution of nitre was formed inside the instrument. Lastly, the author stated that although many difficulties would have doubtless to be overcome before he could lay the result of his experiments within the body before the Society, still, they would only be mechanical difficulties. The principle, which consisted in setting up mechanical action at the spot where it was wanted, whilst elsewhere a dilute neutral solution was present, left nothing further to be desired; at least so far as the solution of uric and phosphatic calculi was concerned. At present, by the aid of the lithotrite, mechanical force is applied to the surface of the calculus, and the stone is passed in fragments. At some future time, by the aid of the litholyte, chemical force will be set up at the surface of the calculus, and it will be passed in solution, or as an impalpable precipitate.—*Medical Times and Gazette*, January 1, 1853.

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42. *Strangulated Inguinal Hernia.*—The *Medical Times and Gazette* (Feb. 19, 1853), contains reports of two cases of strangulated inguinal hernia in patients at periods of life very unusual for such an occurrence. The first was in a boy only twenty-one months old, admitted into the London Hospital, with strangulated inguinal hernia on the right side. All efforts at reduction by taxis failed, even under the influence of chloroform, and Mr. Curling cut down upon the sac. Still, the gut could not be returned, and then a small incision was made in the sac at its upper part, in doing which, the fibres constituting the stricture appeared to have been divided, for the bowel at once returned without difficulty. The patient made a satisfactory recovery.

The subject of the second case was a lad sixteen years of age, admitted into St. Thomas's Hospital, for strangulated hernia of the right side. The operation was performed by Mr. Solly, and presented no unusual feature. Recovery was rapid.

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43. *Fibro-plastic Tumours.*—M. Lebert, the author of the well-known work on Cancer, lately read a paper before the Surgical Society of Paris, on Fibro-plastic Tumours. The principal facts and conclusions brought forward by M. Lebert are the following:—

1. Fibro-plastic tumours are composed of a cellular texture of new formation, similar to that seen in embryonic life. Fibro-plastic tissue may have an inflammatory origin, it may be the result of hypertrophy, or arise quite spontaneously.

2. Fibro-plastic tumours are made up of a soft lobulated tissue, of a pinkish yellow; or else of a firmer texture, of a pale hue, and more homogeneous; or, finally, of a mixture of a gelatiniform substance with the two structures just mentioned. These tumours are situated in the skin, or the subcutaneous areolar tissue; they may be buried in the depth of the muscular masses of a limb, especially the thigh; or else they may spring up in bone, a favourite seat being the jaws; or, finally, they may grow upon the meninges.

3. Fibro-plastic tumours present the same characters in man and in domestic animals.

4. The fibro-plastic texture, which owes its origin to inflammation, has a marked tendency to fibrous transformation; it is often met with in protracted inflammations, of which it is at the same time the support and the product.

5. Fibro-plastic tumours present either a smooth or lobulated surface, and are either globular or flattened, according to their seat, and in cases of hypertrophy they assume the shape of the affected organ. They are generally free and well-defined, but when springing from bone they are sessile, and look like excrescences.

6. These tumours may become very large, both in glandular organs and when seated on limbs, especially when they contain much gelatiniform tissue. They are generally surrounded by a fibro-cellular envelope. When a section is made in a recent case, the liquid obtained is clear and transparent; but it is sometimes thick and dull, when flocculi or entire lobuli are suspended in it. Besides the textures above mentioned, there is sometimes found in the tumours a substance of a pale yellow, and quite dull; sometimes calcareous concretions are found, or else osseous radiations, when the disease begun in the periosteum.

7. Under the microscope, cells with small, rounded, or ovoid nuclei are seen, and all the forms intermediate between the cell and common fibre, especially a great many narrow fusiform bodies; the nucleoli are always very small. There are also perceived original cells with compound nuclei rolled up together, and sometimes fusiform nuclei which then constitute fibro-plastic masses.

8. As regards neighbouring textures, fibro-plastic tumours grow like fibrous tumours, as they press upon these textures without taking their place; whilst cancerous tumours substitute themselves in neighbouring parts. Fibro-plastic tumours follow, as to their growth, the following development: There is first a local deposit; the increase is then slow, but soon becomes rapid; phlegmasia takes place; then come hemorrhage, partial calcification, softening, the formation of cysts, partial ossification, ulceration, and then, in exceptional cases, sloughing.

9. Both sexes are obnoxious to these tumours; they are seen at all ages; but they arise more frequently between thirty-five and fifty years.

10. Recurrence after operation takes place, especially in autogeneous tumours, and has not been observed in fibro-plastic hypertrophy; recurrence is not observed, as in cancer, to arise in distant organs, though it is often caused by an incomplete operation. Notwithstanding the occasional pertinacity of fibro-plastic tumours to recur in the cicatrix, they are not found to injure the general health. In very rare cases, a kind of fibro-plastic diathesis becomes established; this fact has, however, been observed with fibrous, adipose, neuromatous, and melanotic tumours.

11. Singleness and a strictly local nature have been observed as a rule in fibro-plastic tumours. This fact is proved by twenty-six carefully conducted autopsies of cases in which the disease had reached its natural termination, and also by a considerable number of perfect and permanent cures after operation; whilst no such cures are known to exist respecting true cancer.

12. Fibro-plastic tumours have a much more chronic character than cancerous tumours; and save a few cases of very rapid growth, it may be said that fibro-plastic tumours, when they become fatal, last rather more than between five and ten years; whilst the natural duration of cancer is from two to two years and a half. Cases have even been known, and are not rare, in which fibro-plastic tumours have lasted twenty years and more, without much inconvenience. It should, however, be mentioned that these tumours, after a very slow progress, have rapidly assumed a very serious character.

13. Pain is very rarely acute and permanent, and is mostly, as in other tumours, of a neuralgic kind. Functional disturbance depends principally on the seat of the tumour. The general health, in the great majority of cases, remains undisturbed, except in the very rare cases of general fibro-plastic infection, or those in which the local affection has ended in extensive ulceration.

14. The prognosis of fibro-plastic tumours is much more favourable than that of cancer. Curability is the rule. The fibro-plastic texture of inflammatory origin is the more likely to be benign the more it shows a tendency to assume a fibrous character. The prognosis is, in fibro-plastic hypertrophy, likewise favourable. In fact, these tumours constitute a local affection little or not at all likely to recur, which can only become dangerous in so far as its seat, extent, or amount of ulceration are concerned. Kelis is likewise an affection of a simple kind, notwithstanding its pertinacity regarding recurrence in the cicatrix after operation. Fibro-plastic tumours of spontaneous origin are very likely to recur after excision, when they are situated on the tegumentary surface, under the skin, or in the bones. The surgeon should always bear in mind the possibility of general infection, only, however, as an occasional occurrence, but not as a probability. Fibro-plastic tumours seated in the meninges destroy the patient by interfering with the functions of the brain, though remaining all the while a perfectly local affection.

15. The treatment of these tumours should begin with the prolonged use of preparations of iodine, when the origin is of a syphilitic nature, or when the tumour is simply owing to hypertrophy. When an operation is necessary, it should consist, as a rule, of complete extirpation; strong caustics should be tried with superficial tumours of small dimension. Operations in such cases should always be performed boldly, whether the knife be carried into soft parts, or whether the affection be seated in bone. Amputation should be performed when the tumour is situated in the depth of the limb, and the former sends prolongations into parts where dissection is difficult.

Autoplasty should be used to substitute healthy tissue to cicatrices likely to favour recurrence, in operations of a moderate extent, and the tumour is seated on the surface. The actual cautery is necessary when superficial tumours are too extensive to admit of autoplasty.

It is finally advisable to use iodine *after* operations, as a prophylactic means against recurrence or general infection.—*Lancet*, Feb. 26, 1853.

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44. *Relapse of Cancer.*—M. Broca, in a prize essay on the Pathological Anatomy of Cancer, published in the sixteenth volume of *Memoirs of the French Academy of Medicine*, adds some illustrations to the melancholy chapter of relapse of cancer, which he regards as of nearly constant occurrence. Among the patients operated upon by Blandin, in 1847 and 1848, there were 69 who furnished tumours, most of which, prior to the employment of the microscope, would have been regarded as cancerous. On examination, 2 proved to be fibro-colloid, 5 fibro-plastic, 15 epithelial, and 6 partial mammary hypertrophy. Of 39 really cancerous patients, 11 died from the consequences of the operation, and 28 survived these. Of these last, 19 were kept in view, and every one of them had relapse, 16 within the first year, 2 in the course of the second, and the last at the end of the twenty-fifth month. By the beginning of 1850, 17 were dead, and the other two were expected soon to follow them.—*Brit. and For. Med.-Chirurg. Review*, Jan. 1853.

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45. *Researches on the Synovial Cysts of the Hand and Wrist.*—M. Gosselin, in an interesting memoir in the sixteenth volume of the *Memoirs of the French Academy of Medicine*, relates the results of his anatomical researches, made in the attempt at clearing up some of the confusion and contradictions that have prevailed in the description of these tumours. Confounded formerly under the general name of *ganglion*, these swellings have been, of late, distinguished by most writers accordingly as they have occupied the track of the flexor tendons of the palm, or the extensors at the back of the wrists. The distinction is, indeed, an essential one, for in the former case (*dropsical cysts*), an entire synovial bursa is involved, while in the latter (*partial or ganglionary cysts*), a very

circumscribed portion of the synovial membrane is concerned. The object of this paper is to determine the anatomical limits and connections of the first of these, and the mode of formation of the second.

1. *Dropsical Cysts of the Palm.*—Authors have varied much in the descriptions they have given of the direction and number of the synovial membranes accompanying the flexor tendons; and the dissection of more than sixty hands, in both children and adults, enables M. Gosselin to account for this discrepancy by the varieties of distribution which actually prevail. Amidst these there is, however, a regular disposition observed in the majority of cases, and met with in the fœtus, children and women not accustomed to manual labour. There are two synovial membranes, which, taking their origin a little above the annular ligament, are continued, the one to the second phalanx of the thumb, and the other to the second phalanx of the little finger. The first of these is reflected from the level of the carpus around the tendon of the flexor proprius of the thumb. The internal one is reflected on to the tendons of the flexors of the little and ring fingers, extending to a much less length along the latter. The tendons of the index and medius fingers are unprovided with these bursæ, and may be separated without opening either the outer or inner synovial cavity. Normally, these two cavities do not communicate, but an occasional variety is met with in which they do. A more frequent variety consists in the presence of a supernumerary sac, placed between the two others, above the annular ligament, and not unfrequently communicating with one of them, especially the internal. In the course of the prolongation of the internal cavity, it normally undergoes a narrowing at about midway of its course, and a not unfrequent variety is found in its becoming obliterated at this point. As a fourth variety, may be noticed the presence of small, isolated, synovial sheaths, distinct from the others, formed from the cellular tissue of the superficial tendons. Thus, normally, there are two synovial cavities in this locality; and when authors have described more, they have been alluding to some of these varieties. We see also why, as a result of chronic inflammation, the little and ring fingers are those especially liable to become contracted.

2. *Ganglionary or Partial Synovial Cysts.*—M. Gosselin has nothing new to communicate respecting the symptoms or treatment of these ganglions, so often met with at the back of the wrist, his object being merely to draw attention to their mode of origin. After adverting to the different explanations of this, hazarded by prior writers, he states that he has been led to offer a new one, by having observed, in a great number of radio-carpal joints he has examined, immediately beneath the synovial membrane, behind the semilunar and scaphoid bones, certain whitish or grayish corpuscles, varying in size from that of a millet-seed to that of a pea. Some of these slightly project into the articulation, but, in most cases, concealed in the sub-synovial cellular tissue, they are only brought into view by the careful removal of the synovial membrane, to which they somewhat firmly adhere. Usually, they do not communicate with the joints, no orifice being discernible; and their contents, which resemble those of ganglions, only issue out upon incision. These *sub-synovial* bodies are also met with in the medio-carpal joints, but much more rarely. Whether viewed as to their *locale* or their contents, these bodies must be regarded as exhibiting the earliest stage of ganglionary formations; and the frequency of their existence, and regularity of their position, lead to the inference that they are modifications of a natural disposition. Additional researches have brought M. Gosselin to the conclusion that all the articular synovial membranes (and especially those of the wrist) are provided with prolongations, or *culs de sac*, which may be called *synoviparous crypts or follicles*, and that the obliteration of the orifice of these crypts gives rise to the accumulation of synovia. The crypts are, indeed, but one of the means employed for extending the synovial secreting surface; and in some instances they communicate with the general cavity by broad, and in others by very minute openings, the latter being liable to this obstruction. Velpeau and the Webers have, indeed, adverted to these synovial prolongations, but they have not generalized their descriptions, or made the pathological application. These crypts are to be found in all the principal articulations; and in the horse these follicles and their communicat-

ing orifices are found on a much larger scale. Taking this general view of them, the conclusion becomes irresistible, that these depressions of the synovial membranes are means for the enlargement of surface analogous to the single follicles of the skin and mucous membranes. The reason why the orifices of these follicles of the wrist-joint should so especially become obliterated, and give rise to ganglions, is not to be ascertained any more than that of the greater frequency of sebaceous cysts in certain regions of the skin. The sub-synovial bodies thus produced may remain stationary, their outward progress being opposed by the aponeuroses which surround them; or they may increase towards the cavity of the joint, into which they may at last burst. If the aponeurotic resistance is less decided, or in part destroyed, the bodies make their way towards the surface under the form of *ganglions*. M. Gosselin has been unable to observe any of the synoviparous follicles in the sheaths and bursæ of the tendons; and it is therefore a highly important fact, in a practical point of view, that the ganglions are in communication, not with these sheaths, but with the joint itself, into which, indeed, they sometimes, at an advanced period, discharge themselves.—*Brit. and For. Med.-Chirurg. Review*, Jan. 1853.

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46. *Inflammatory and Non-inflammatory Ruptures of Ovarian Dropsical Cysts.*—Professor J. Y. Simpson has published (*Monthly Journ. of Med Sci.* Dec. 1852) some interesting observations on this subject. The following are his conclusions:—

1. The cysts forming an ovarian dropsy, occasionally rupture, *first*, from inflammatory effusion into and distension of their cavities; or, *secondly* (the contents of the cysts being only the common bland secretion of such cysts, and unmixed with any inflammatory matter), they may rupture from mere over-dilatation and gradual attenuation of their coats, or under sudden mechanical pressure and injury.

2. When a cyst ruptures from the effects of inflammation, or contains within it at the time of rupture inflammatory secretions and materials, the escaping fluid, if effused into the cavity of the peritoneum, is always liable to be followed by dangerous, and generally fatal, peritonitis.

3. If, however, a cyst bursts into the peritoneum under mechanical injury, or in consequence of simple laceration from over-distension of its cavity, and the fluid effused into the sac of the peritoneum is consequently not commixed with inflammatory secretion, there is little or no great tendency to peritonitis.

4. Sometimes, indeed, when thus a non-inflamed ovarian cyst ruptures into the cavity of the peritoneum, the life of the patient is preserved, or at least prolonged, by this accident.

5. When an ovarian cyst ruptures into a mucous canal, or upon the cutaneous surface, the safety or danger attendant on the laceration is not regulated by the inflamed or non-inflamed character of the effused fluid.

6. In cases in which the fluid of an ovarian cyst obtains an outlet by a mucous canal, or by the skin, a temporary or more permanent reduction of the tumour and comparative cure of it may be the consequence.

Lastly, let me add that, as in many cases and points the surgery of art is an imitation of the surgery of nature, possibly the artificial repetition and establishment of the above modes of relief, if they could be imitated safely and certainly, may yet be found capable of temporarily arresting, if not curing, ovarian dropsies in some appropriate cases, and more particularly in instances in which the bulk of the tumour is formed by one large preponderating cyst.

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47. *Rupture of the Perineum.*—Mr. I. B. Brown read an interesting paper on this subject before the Medical Society of London, January 8, 1853. He began by referring to a paper that he read before the Society in 1851, and, recapitulating some of the points therein discussed, introduced his new mode of operating for ruptured perineum. The patient should be placed in the position for lithotomy; the knees well bent back upon the abdomen by an assistant to each leg; that the parts around should be carefully cleansed of hair by shaving; then each assistant should hold the sides of the vagina and perineum, so as to insure sufficient tension for the operator to make a clean incision with a scalpel down

into the vagina about three-quarters of an inch on each side, removing carefully and thoroughly the mucous membrane. Having done both sides, there would still remain a space covered with mucous membrane between those two sides, embracing the edges of the rectum where the sphincter was lost; that this must also be carefully denuded—very carefully, because, if there remained the slightest portion of mucous membrane around, or even near to the rectum, then most certainly there would be a recto-vaginal fistula after the restoration of the perineum; that some operators, especially on the continent, had removed the mucous membrane by the scissors, but Mr. Brown stated that that was a long and insecure method, and that the knife would be found quicker and better. Mr. Brown observed, that as soon as this stage of the operation was completed, the sphincter should be divided as before described; then the legs should be relaxed, and the thighs brought more in apposition, so as to allow the sides of the vagina to be grasped with the forefinger and thumb of the left hand, while with the right the sutures were passed deeply through each side, as deep as the denuded surfaces of the vagina; the first backwards, as near the rectum as possible without piercing it; the second and third in the same way; that the length of the incision should correspond with the scar of the ruptured surfaces; that the sutures were double, so as to allow the quill, or, more properly, the piece of elastic bougie, to pass through each suture on both sides; Mr. Brown preferred twine to silk for the sutures, because it was less irritating, and produced, therefore, less suppuration; that the forefinger of the right hand should then be passed into the vagina, and the forefinger of the left hand into the rectum, so as to ascertain that there was no opening; that, having secured the three sutures firmly to the bougies, it was advisable to bring the edges of the incised surfaces together by three or four interrupted sutures; that, if this step of the operation be carefully done, union of the skin would quickly take place, and materially facilitate the union of the deeper surfaces. Mr. Brown observed, that it had been asserted by many accoucheurs of the highest eminence, that if the operation be performed immediately after the accident, no good would result, as the lochia would flow in between the surfaces, and thus prevent adhesion and union; that he had found that opinion to be entertained by Trogher, in the 7th volume of the *Vienna Journal*, for 1851; for he therein states, among other conclusions drawn from sixteen cases, "that a favourable issue could only be expected where there was a very moderate flow of lochia;" also, "that it was impossible to protect the margins of the wound from the injurious influence of the lochia." Mr. Brown believed that these objections were removed by dividing the sphincter; if not divided, the inner edges of the wound would be gradually drawn apart by the action of that muscle, and the lochia would penetrate; whereas, after division, those edges were perfectly passive, and steadily kept together by the sutures. In the after treatment, great stress was laid upon keeping the patient quiet, drawing off the urine as often as required, and the use of opium to keep the bowels constipated for several days after the operation. Mr. Brown stated that, for the convenience of discussion, and in order to make his paper more intelligible, he affirmed four distinct propositions, which he hoped to demonstrate by the cases which followed: Firstly. That the oldest and worst forms of ruptured perineum could be cured by the operation he had already described. Secondly, That the worst forms could be cured by operating immediately after the lesion. Thirdly, That the new perineum was not torn by, or prejudicial to, subsequent parturition. Fourthly, That those forms of rupture where the sphincter was not torn through, should be cured to prevent prolapsus uteri, &c. Mr. Brown illustrated the first proposition by five cases; then the second and third propositions by three cases; and, finally, the fourth proposition by two cases.

Dr. Barnes said it was impossible to overdraw the picture of the miseries, physical, mental, and social, which resulted from this terrible infliction, nor was it possible to estimate too highly the means of bringing relief. It certainly was true that this accident was a reproach to surgery; many eminent surgeons had abandoned the hope of giving effectual relief. It was to escape from this difficulty that some obstetric authors had endeavoured to persuade themselves that a ruptured perineum was, to a certain extent, a good thing, inasmuch as

a future labour would be easier. Confident that the perineum was a useful structure, and that the design of nature was clear, he (Dr. Barnes) strenuously maintained that in every case of laceration the injury should be repaired to the utmost possible extent. Before considering the merits of Mr. Brown's proceeding, he (Dr. Barnes) would make one observation upon a purely obstetric point, in which he thought Mr. Brown had come to a hasty conclusion. Mr. Brown had stated, that whenever the pains in labour gave way after labour had made some progress, he drew the conclusion that the cord was twisted round the child's body, and that the child's life was in danger, or rupture of the perineum was to be feared. He (Dr. Barnes) could not trace any connection between twisting of the cord and rupture of the perineum. Again, when a remission of the pains, such as Mr. Brown referred to, occurred, such pains as he (Dr. Barnes) had been accustomed to call "abortive pains," there were numerous causes to which they might be attributed; any impediment to the labour might account for it; the one which Mr. Brown alluded to was only one among many. To the operation pursued by Mr. Brown, he (Dr. Barnes) was willing to accord considerable praise; but he thought it inferior to the proceeding of Mr. Charles Brooke. The two great objects of this operation were to obtain perfect apposition of the two surfaces, and then to secure perfect quiescence. He believed this could not be done by the common quill-suture employed by Mr. Brown; whereas, by means of the bead-sutures of Mr. Brooke, these objects were perfectly obtained. Another great advantage over the quill-suture was, that by means of the bead-suture a perfect apposition of the internal wound—that of the mucous membrane of the vagina—could be obtained by the use of one or more sutures for this purpose. In this manner the lodgment of any foul secretions between the edges of the wound inside the vagina—a great source of failure in these operations—was avoided. There were two points much insisted upon by Mr. Brown, upon which he (Dr. Barnes) could not agree. From his own experience of two successful cases, he was prepared to say that the practice of locking up the bowels for eighteen days was not necessary; and he could not but apprehend that some injurious effects upon the system might ensue from the continued large doses of opium given for that purpose. The division of the sphincter was an important improvement upon the old proceeding when the quill-suture was employed; but with the bead-suture he did not believe it was always required. In the two cases he had witnessed, in which Mr. Brooke's plan was followed, in one of which Mr. Brooke operated, and in the other when he (Dr. Barnes) had performed it himself, entire success was obtained by the perfect security against motion provided by the bead-sutures. Undoubtedly, Mr. Brown was justified in surrounding his operation with every possible precaution. He (Dr. Barnes) however wished to suggest to Mr. Brown, that in any future case he should, when dividing the sphincter—for if he adhered to the old quill-suture, in order to secure the success of his operation he must divide the sphincter, that he should do so by subcutaneous section; he had several times seen this done by M. Blandin, the late Professor of Surgery, at Paris; and he (Dr. Barnes) considered it much preferable to the severe proceeding of cutting through all the structures of the rectum. In concluding, he would again express his sense of the value of Mr. Brown's communication; but he felt called upon to remark, that Mr. Brooke's method had been before the profession for some years, and that in any discussion upon the methods of relieving lacerations of the perineum it ought not to be passed over.

Dr. Murphy could not agree in all the views expressed by Mr. Brown, though he admitted that new light had been thrown upon the subject by the paper. The paper must be regarded from two points of view: first, in its surgical, and secondly, in an obstetrical point of view—viz., as to the selection of cases which required operation, and of those which should be left alone. In the two first cases detailed by Mr. Brown, in which the sphincter had been entirely divided, the operation was excellent; but in the slighter cases, in which there was only slight laceration of the external sphincter, he questioned the propriety of operative procedure, looking at the risk of mischief following it, particularly when resorted to immediately after delivery. He must, therefore, protest against cutting so soon after parturition. Looking at what nature effected in slight

cases of laceration of the perineum, he did not consider that the operation would, in these instances, be often necessary. Let alone, they became so contracted that even where the perineum had been ruptured to the extent of two and a half inches, it would, in course of time, be so repaired, that it would not be known that any laceration had taken place. If, therefore, the laceration was not so great that support was not lost for the uterus, it was not necessary, in his opinion, to operate. In the cases operated upon, Mr. Brown had related one in which the contraction following the operation was so great, that the perineum would again have ruptured during parturition had not chloroform been administered to the patient. A new cicatrix would rupture more quickly, and perhaps to a greater extent than the original normal texture; for the tissue of the cicatrix would not expand, and there would be great fear of rupture.

Mr. Brown, in reply, spoke of the great neglect of English and foreign authors, in respect to the operation for lacerated perineum. He believed that the operation hitherto has failed mainly from the neglect of the after-treatment. With respect to the bead-suture, he could not see its advantage over the one he had used, and found successful. He urged the necessity of division of the sphincter before the application of the sutures, in bad cases. He defended the use of opium to constipate the bowels, and had never seen any ill effects from its employment. He contended that the subcutaneous division of the sphincter, as recommended by some, would not be sufficient; the entire structure must be divided, in order that no stress whatever should be made on the divided edges. He differed with Dr. Murphy as to the risk of the operation in respect to vaginitis. He supported patients with meat and wine from the commencement, even when the opium was being used. With respect to smaller lacerations, he contended that it was the duty of the surgeon, if he could afford any relief, to give it.—*Lancet*, Jan. 22, 1853.

48. *Iodide of Sodium in the Treatment of Constitutional Syphilis.*—Dr. Ubaldo Daveri has employed the iodide of sodium instead of the corresponding salt of potash. The iodide of sodium employed by Dr. D. was prepared according to Ruspini's directions, by placing three ounces of filings of iron in two and a half pounds of distilled water, and gradually adding, with constant agitation, a pound of iodine; as soon as the mixture had acquired a greenish colour, it was filtered, and quickly treated with a solution of carbonate of soda until all the iron was thrown down. The carbonate of iron thus formed was separated by filtration, the filtered fluid evaporated to dryness, and the residuum again dissolved, filtered, and evaporated until a pellicle had formed. By this method fourteen ounces of iodide of sodium were procured in the form of white rhomboidal prisms, deliquescent, and having a saltish taste less disagreeable than that of iodide of potassium.

The iodide thus prepared was found to answer much better than that made from iodine and caustic soda, the salt procured by the latter process being not only disagreeable to the taste, but giving rise to a burning sensation in the fauces, to weight and uneasiness in the stomach, and to gastro-enteric pains—effects attributed by the author to an excess of iodine which the salt was, by analysis, found to contain.

The dose administered at the commencement of the treatment was always a scruple of the iodide dissolved in three ounces of distilled water, and given in three equal portions in the course of twenty-four hours. The salt was likewise employed, in the form of ointment, in the proportion of half a drachm or a drachm to the ounce of lard. In the administration of the iodide of sodium, the same rules and precautions are to be observed as apply to the use of the potassium salt. Although the author, for reasons and facts set forth in his Manual of Venereal Diseases, repudiates the distinction of constitutional syphilis into secondary and tertiary, he divides the 116 cases, on the observation and treatment of which his present paper is based, into the three following classes:—

1. Cases of constitutional syphilis in which so-called secondary and tertiary phenomena coexisted.

2. Cases of so-called tertiary lues in which the use of mercury preceded the treatment by iodide of sodium.

3. Cases of so-called tertiary lues in which iodide of sodium alone was employed.

Of the first class, twelve cases, in which the symptoms were pains in the bones or periostitis, united with some manifestly constitutional affection of the skin, generally of a papular or pustular form, were treated with iodide of sodium. In eight of these cases the use of the salt alone effected a cure; in the remaining four it was necessary to have recourse to mercurial frictions to remove the cutaneous affection which remained after the tertiary symptom had yielded to the administration of the iodide. The minimum quantity which succeeded in curing the disease was three drachms, the maximum three ounces; the quantity which was usually required ranged from two to three ounces; the shortest time in which the symptoms were removed was nine days, the longest three months, the average was about a month.

The author thinks it possible that the four cases in which the iodide of sodium thus appeared to fail might have yielded to a longer perseverance in the use of the salt. This was, however, precluded by the circumstances of the individual cases.

The cases of the second class, or those of so-called tertiary lues, in which the use of mercury preceded the treatment by iodide of sodium, were seventeen; in some of these, six or seven ounces of strong mercurial ointment had been rubbed in; the average quantity was from four to five ounces. The minimum quantity of iodide of sodium administered was three drachms, the maximum, four and a half ounces, the average from one to two ounces. It is most important to observe, that those patients who had derived no benefit from a protracted course of mercurial treatment, were cured after the administration of a small quantity of iodide of sodium; while this remedy had to be given to the extent of four and a half ounces in cases in which only a limited number of mercurial frictions had been used: the patients who resisted the long-continued employment of the ointment, laboured under osteocopic pains, which subsequently gave way to a small quantity of the iodide; while those who practised without benefit a moderate number of mercurial frictions, suffered either from syphilitic rheumatism, or from a mixture of syphilis and scrofula. This fact of the iodide being required in the inverse ratio of the amount of mercury previously employed, arises, the author thinks, from this—that in the first case the use of mercury had in a great measure overcome the syphilitic element, which was then entirely removed by the administration of the iodide; while in the second, the elimination of the constitutional venereal principle commenced by the mercury was, for the most part, reserved for the iodide of sodium; and he points to a therapeutic consonance between the two agents, corroborating an opinion formerly advanced by him that the iodides of sodium and potassium are the best substitutes for mercury, as they are about equally efficacious with it in the treatment of so-called tertiary phenomena.

The cases belonging to the third class, comprising those of so-called tertiary lues, in which the iodide of sodium was the only medicine administered, were eighty-five in number; of these, thirty-seven were cases of ostalgia, in the treatment of which vapour-baths and iodide of sodium were employed; the minimum quantity of the latter given was from one to seven drachms, the maximum from eight to twelve ounces, the average from two to four ounces. Of rheumatalgia, the cases were seventeen—likewise treated with vapour baths and the iodide; the minimum dose of the latter being from two to four drachms, the maximum nine ounces, the average two to four ounces. Of arthralgia, nine cases were similarly treated, the minimum quantity employed having been seven drachms, the maximum two ounces. Of the other varieties of tertiary disease, the numbers were too limited to require special mention, or to justify the deduction of conclusions from them.

The inconveniences which frequently attend the use of the preparations of iodine, and amongst them of iodide of potassium—such as derangement of the stomach, iodic eructations, ptyalism, and affections of the throat, were seldom met with from the time the iodide of sodium was substituted for the potassium salt; consequently, the remedy could be more steadily persevered with, and its dose more rapidly increased; circumstances directly promoting the cure of the

diseases for which it was administered. In the few cases in which ptyalism occurred, it totally ceased on suspending the medicine for two or three days. In but a single case did it appear to be obstinate; and in this instance the mouth was, on examination, found to be pale, free from swelling, and very slightly painful; as the patient lay in a ward with many syphilitic patients under mercurial treatment, it was thought the salivation might be owing to mercurial vapour present in the atmosphere, a suspicion which was verified by the result; for on removing the patient to another apartment free from mercurial contamination, the salivation entirely ceased in two days.

At the time the author drew up the report of the first experiments with this salt, Dr. Lesi, Assistant Physician to the Hospital of Saint Orsola, had noted that the mean time required for the cure of nineteen patients treated with the iodide of sodium was about twenty-eight or twenty-nine days, while with the potassium salt, likewise exhibited in nineteen cases, the average time was from thirty-four to thirty-five days. Many cases which had either not got entirely well, or were proceeding but slowly under the use of the iodide of potassium, were rapidly cured by the substitution of the corresponding salt of sodium.

Several of the cases, however, treated with iodide of sodium relapsed, and the disease again yielded sometimes to a repetition of the remedy, sometimes to the use of mercurial frictions. But this circumstance cannot be urged against the iodide of sodium alone; for the same is equally true of every other antivenereal remedy—one of the leading features of lues being its tendency to present periods of lull and of relapse, whatever be the therapeutic means employed to combat the constitutional taint from the first moment of its manifestation to the last evidence of specific disease.

The author concludes his paper with the following *resumé*:—

1. Soda being a very common ingredient in our organism, the iodide of its base appears best suited to the human system.
2. The taste of the iodide of sodium is much less disagreeable than that of the iodide of potassium.
3. It is less likely to occasion iodism.
4. It is better borne than the potassium salt, and in consequence of this its dose can be almost daily increased, and it thus becomes a more efficient remedy.
5. It has sometimes succeeded where the iodide of potassium had failed.
6. We may commence by giving daily, in three equal doses, a scruple of the salt dissolved in three ounces of distilled water, increasing the strength of the solution every two or three days by six grains. Some patients have in this way been able to take more than two drachms a day without suffering the slightest inconvenience.
7. The iodide of sodium is admirably adapted to cases in which the corresponding salt of potassium is indicated.
8. The iodide of sodium is the best substitute for mercury.—*Dublin Quarterly Journ.* Nov. 1852, from *Corrispondenza Scientifica di Roma*, 1852, No. 32.

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49. *Paste made with Sulphuric Acid and Saffron as a new Caustic in Malignant Ulceration of the Face.*—M. E. Cazenave, of Pau, relates, in *L'Union Médicale* for 22d January, two cases of malignant ulceration of the face, in which he has successfully employed a local application, made from sulphuric acid and powdered saffron. The remedy is formed by pouring the acid on the saffron, and applying it in the form of a soft paste. Its corrosive action is immediately manifested on the diseased tissues; the paste dries, and falls off in two or three days, in the form of black crusts, which carry with them the eschar. The application is made several times; the wound assumes a healthy red tint, and cicatrization takes place. In one case a year has elapsed, and in the other two years; and the disease has not returned.

The efficacy of this treatment is evidently dependent on the sulphuric acid, which, we believe, would succeed equally well if made into a paste with common flour, or any ligneous powder, as with saffron. A paste of sulphuric acid and flour would be worth trying in obstinate cases of phagedenic ulceration.—*Assoc. Med. Journ.* Jan. 28, 1853.

50. *Suppuration in the Mastoid Process in Children.* By Dr. Riecke, of Berlin.—The formation of pus in the ear is not unfrequent in scrofulous children, but the extension of the suppuration to the mastoid process of the temporal bone is rare. I shall here describe some cases in which the mode of this occurrence appears to me to be still more interesting than the occurrence itself.

M. v. E., a weakly child of scrofulous tendency, and excitable nervous system, in January, 1835, while playing in stormy weather in the open air, was seized with most violent pain in the right ear. She became somewhat feverish, and the attack appeared to consist merely in a slight cold affecting the ear. Mild diaphoretics, little bags of warmed herbs laid upon the ear, a warm bed, and a small blister to the nape of the neck, soon gave relief. After some days a brownish-yellow thin discharge took place from the right ear, which in the course of a few days more became whitish and thicker, and lasted a fortnight. It then entirely ceased for a fortnight, the patient being in other respects well; nevertheless, the violent pain increased, without external cause, and the secretion from the ear subsequently set in again. The discharge did not diminish under the employment of stronger derivative measures, such as blistering and purgatives; the pain, however, disappeared. In the beginning of April, the skin covering the mastoid process behind the right ear began to swell, to be tender, and to assume a reddish colour. Pain and fever again set in. Leeching and the application of mercurial ointment gave relief; a greater discharge again took place from the ear, and the patient hawked up, especially on awaking in the morning, much purulent matter. Alterative medicines were exhibited, and the case was going on well. The swelling and pain in the mastoid process diminished. Fourteen days after, a swelling again suddenly took place, while the discharge from the ear ceased. The tumour was so large that it threatened to break, and I thought I could distinguish with the touch through the soft swelling the expanded laminæ of the bone. I now meditated opening the tumour, but at one time the dread of the knife manifested by the little patient and her friends, at another the apprehension that the probably unfavourable result would be attributed, as it so often is by the ignorant, to surgical interference, prevented me doing so, a policy not blamable in a young practitioner, especially where there is no pressing indication to use the knife. Injection into the ear and the application of warm emollient poultices to the parts were now repeated in order to re-establish the discharge. At length the discharge from the ear suddenly recommenced; during the following night the little patient again brought up a quantity of bloody pus, and the great external swelling of the mastoid process as suddenly disappeared. The discharge from the ear continued until the middle of May; it was reported to have been fetid during the entire of one day; with this exception it was free from smell. On a sudden, a swelling of the mastoid process took place within a few hours, attended as before with a cessation of the discharge from the ear. It was easy to feel fluctuation under the laminæ of bone covered by the thin integuments, and the tumour appeared this time to be decidedly about to open. Nevertheless, a purulent discharge was again established from the ear and throat; the mastoid tumour quickly diminished; and by the end of May the discharge had entirely ceased both from the ear and throat. Hearing continued unimpaired, so that in the month of June the patient's recovery was complete.

This was one of the rarer cases of affection of the ear in which the pus flows through the Eustachian tube to the throat. It may certainly often occur without being observed, for in the daytime the discharge is generally swallowed by the little patient; it is only in the morning, when it collects in greater quantity, that it is brought up. The case should also teach us not to be overhasty in opening such tumours externally, a proceeding which might induce the establishment of a tedious caries, and leave behind it a disfiguring scar. The following affords an additional illustration of the truth of this view.

In the April of the same year, the wife of a wind-miller brought me her son, aged four years, who was suffering from caries of the mastoid process. On inquiry into the history of the case, I ascertained that he, likewise, in the month of January, 1835, was attacked with pain in the ear, otorrhœa, and swelling of the mastoid process, which finally burst, without medical assistance having

been sought. The child being otherwise in good health, the sore healed in a few months without other treatment than attention to cleanliness. A year subsequently his head was crushed by the sail-beam of the windwill, and he died in an hour after the injury. On dissection, I examined the mastoid process. There was a deep tortuous canal of the size of a crowquill, which involved the internal layers of the temporal bone, and was lined by a thin membrane covered with a brown greasy, fatty matter. The cells of the mastoid process which were not touched by this canal were in their normal condition; those situated in its neighbourhood had grown into union with it.

It is remarkable that in the month of April a third patient, the son of a brickburner, was brought to me with a fistula in the mastoid process, which dated its origin from an attack of acute earache, caused by exposure to severe weather in the preceding January. All three patients, it was proved, had brought on the attack on a very stormy day; the first, in a playground adjoining a highly located church; the miller's son in the neighbourhood of the mill, likewise in an elevated situation; the son of the brickburner in the exposed locality of the tiler's hut. It appears to me remarkable that, although I have during thirty years had much experience, no similar case should have occurred to me either before or since those I have detailed. Three cases of an undoubtedly rare affection arising at once, and, so to speak, even in one day, almost point to an epidemic origin. Acute and violent earache in children, who pass from a warm room into a severe and piercing January wind, is a frequent occurrence, but it is certainly rare and remarkable that in each of these three patients, the affection should have had the same unusual termination in suppuration of the mastoid process. I may also observe that my case-book at that time contains no history of any affection of the ear but the three given above.

It would not be uninteresting, in reference to the theory of the origin of epidemic diseases, if other physicians had experienced something similar at that period, and would record their observations. Since we now know that the air is at times impregnated with matters (ozone) which have an irritating effect on the respiratory passages, a strong current of air pressing into the ear may, if it contains an irritating principle, excite in this organ very peculiar affections. In natural science every observation is of value, and often finds its explanation only after the lapse of years, or even of decennial periods. For this reason it may be useful to have recorded the foregoing cases; besides, they afford instructive proof that in abscess of the mastoid process, we should not hastily have recourse to the knife; and they also show that we need not very much dread the occurrence of caries, if we take care to avoid employing means which may be productive of injurious consequences. My patients recovered under simple treatment. — *Dublin Quarterly Journ.* Nov. 1852, from *Journal für Kinderkrankheiten*, March and April, 1852.

OPHTHALMOLOGY.

51. *Benzoic Acid in the Treatment of Sclerotitis.*—Mr. White Cooper, in an interesting paper on Sclerotitis (*Association Medical Journal*, Jan. 28, 1853), states that he has employed, at the suggestion of Mr. Ure, the benzoic acid in this disease, in the case of a member of Parliament, who from exposure was attacked by rheumatism of the muscles, followed by a sudden attack of sclerotitis of one eye, which for a fortnight had bid defiance to active general measures and local sedatives and astringents. When seen by Mr. Cooper, the conjunctiva and sclerotica were intensely inflamed, the corneal zone being strongly marked. The iris, naturally blue, had a green tinge, but was not otherwise altered; the pupil was contracted, and sluggish; the globe excessively tender; he had much mistiness of vision, intolerance of light, and profuse discharge of scalding tears. There was great supraorbital pain, involving the whole side of the head, and

greatly aggravated at night. This state of things had existed a fortnight, and he was very low, with cold skin, and feeble pulse.

The history of the case, and the symptoms, indicated rheumatic sclerotitis, which had gradually involved the iris and the choroid; and Mr. C. thought it a favourable opportunity for trying benzoic acid. Six leeches were first applied to the mastoid, and the patient was then ordered to take half a drachm of powdered benzoic acid thrice a day. He began this on a Tuesday. On the Thursday, there was a manifest improvement; he had passed a good night, and could face the light, whilst the local inflammation had materially decreased. The powders were stopped on the Friday, as he complained that they made him sick; the improvement, however, continued. The only other medicine ordered was a little gray powder; and on the Monday following—the sixth day after fairly commencing this treatment—the patient left town with his eye almost entirely free from redness, and with merely some haze of vision, all which symptoms, Mr. C. subsequently learned, disappeared in the course of another week.

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52. *On the Use of Chloroform in Operations on the Eye.* By White Cooper, Ophthalmic Surgeon to St. Mary's Hospital, &c.—In common with many others, I for some time hesitated before using chloroform in extraction of cataract, from a fear that the object of the operation might be defeated by the eye receiving injury during the return to consciousness, or by vomiting afterwards. It appeared to me, however, so deserving of a trial, that nearly two years ago I first employed it, and since that time have availed myself of it very frequently in operations on the eye, including sixteen cases of extraction of cataract, nine of artificial pupil, four of foreign bodies in the eyeball, and two of tumours in the globe, besides numerous needle cases. Several of the cases have been published in the *London Journal of Medicine;*[1] and among the gentlemen who witnessed the more difficult operations, I may mention Mr. Barnard Holt, Mr. W. F. Barlow, Mr. Holmes Coote, Mr. Charles Hawkins, Mr. G. Pollock, Mr. J. R. Lane, Dr. Toogood, etc. Having had this experience, I propose to offer a few observations, which may be found practically useful.

The advantages obtained by the use of chloroform in operations on the eye, are, a perfectly quiescent condition of all the muscles, whether of the globe or the lids, absence of congestion of the eye, and mental tranquillity for the patient. To the operator, the perfect repose of the eye affords a manifest advantage, the various steps of the operation being performed with as much facility as in a demonstration on the dead subject; the risk of prolapse of the iris (which is usually caused by muscular action) is greatly diminished, and the corneal flap can be accurately adjusted.

Under ordinary circumstances, the very act of raising the lid and fixing it, causes a sympathetic rush of blood to the eye, which vascularity is increased during the various stages of the operation. When the patient is unconscious, nothing of the sort happens. I have repeatedly completed the extraction, leaving the eye as free from congestion as before it was commenced; and the same has been noticed by gentlemen who have witnessed my needle operations at St. Mary's.

There is perhaps no operation more dreaded by nervous persons than that of extraction, from an exaggerated idea of the sensibility of the eye. The knowledge that the operation will be performed without the least suffering, inspires such persons with confidence; and the joyous state of mind which all patients experience on awaking from sleep and finding the operation concluded and the eye bound up, is highly favourable for recovery. And now as to the proceedings.

I strongly advise that in operations on the eye under chloroform, there should be at least one competent assistant besides the operator and the administrator of chloroform; each of these has his own department to engage his attention, and it is most embarrassing to have the patient partially recover and struggle just at a critical moment. This occurred in the first extraction under chloroform

[1] "Cases of Foreign Bodies in the Eye," vol. iv. p. 301; "On Cysts in the Interior of the Eye," vol. vi. p. 787.

performed by me; and, as it was the first case of the sort in which Dr. Snow had administered the vapour, the patient had not a sufficient dose. It unfortunately happened that the gentleman who was to have assisted me was prevented keeping his appointment, but I imagined that the doctor and I could manage the lady ourselves; in due time, she appeared completely insensible, but just as the section was being satisfactorily completed, the patient threw her head on one side and tried to sit up; the consequence was, that the operation was impeded, considerable prolapse of the iris took place, and a closed pupil was the result.

The patient should be recumbent. In that posture he can rest quietly after the operation, and is more manageable during the period of excitement than when sitting in a chair. I have tried the administration of chloroform on a handkerchief, and by means of Dr. Snow's apparatus, and decidedly prefer the latter. When the handkerchief was used, it was in my way, and the fumes of the chloroform annoyed me—matters of importance in such a delicate proceeding as extraction. A *full* dose of chloroform is necessary, and the patient should not partake of food for five or six hours prior to the operation; but he may swallow a few fragments of ice just before it is commenced, and again as soon as consciousness returns. This (which I believe was first suggested by Dr. Simpson, of Edinburgh) allays any tendency to vomit. I prefer operating in the afternoon, as the soporific effect of the chloroform continuing, generally insures a good night; but the hands must be secured, and the patient carefully watched, as under ordinary circumstances.

With regard to the operation itself, it is important to have the point of the extraction-knife as sharp and the edge as keen as possible. If there be the least *hanging*, the eye will be pushed before the knife, from the utter passiveness of all the muscles, and unless the operator is prepared for this, there will be great probability of the counter-puncture being made too near the centre of the cornea, whereby the section will be too small.

During extraction, as ordinarily performed, the lid is dropped as soon as the section is completed, and a pause takes place to permit the eye to become quiet. Under chloroform, this is unnecessary; there being no spasm, the curette may be used, and the cataract pressed out the moment the section is completed. When the lens has escaped, the eye presents a curious appearance, always supposing enough chloroform has been administered; the muscles being passive, the iris falls back in a concave form, and the cornea having no support, sinks, becoming as wrinkled as a shrivelled apple. The eye having been gently cleansed, and the lids dried with a soft rag, the upper lid should be lifted by the lashes and brought down over the cornea; then two broad strips of adhesive plaster should be crossed over the eye and cheek, a bandage applied, and the patient left quiet for half an hour or an hour, after which he can be removed to bed. When all fear of vomiting has subsided, the plaster may be taken off: but it must be thoroughly softened with warm water, and lifted with the utmost caution and gentleness, so that there be no dragging on the lids. The subsequent proceedings differ in no respects from those practised after the operation as ordinarily performed.

In these remarks I have especially mentioned extraction, but the general directions are equally applicable to all operations on the eye; and, I may add in conclusion, that when operating on an eye in a state of inflammation, as in the extraction of a foreign body, a shot, a fragment of steel, or copper cap, the value of chloroform cannot be too highly estimated.—*Ass. Med. Journ.* Jan. 7, 1853.

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53. *Observations on Morgagnian Cataract, with Cases.* By W. R. Wilde, Esq., F. R. C. S.—Cases of what are termed Morgagnian cataract being very rare, their pathology being but imperfectly understood, and great variety of opinion existing among authors with respect to their cause, symptoms, and treatment, I am induced to offer to the profession the following observations on the subject, the result of four cases which came under my notice within the last few years. The question of a fluid existing during life between the capsule and the lens, as originally believed by Morgagni, would appear to be set at rest by the

investigations of modern anatomists, who have paid special attention to the structures of the eye—the late Mr. Dalrymple, Dr. Jacob, and Mr. Bowman. By those, however, who believed in the existence of this fluid between the capsule and lens during life, it was conceived that a morbid action might be set up in it, whereby it became muddy or opalescent, the lens itself retaining its transparency and form. The best ophthalmic pathologists, however, of the present day, are of opinion that the Morgagnian is but a variety of fluid cataract, commencing in the external layer of the lens, and which process, if continued long enough, would end in softening of the whole. In addition to this, Mr. T. Wharton Jones, in his *Manual of Ophthalmic Medicine and Surgery*, says: "With, perhaps, absorption by endosmose of aqueous humour into the capsule determined by a diseased state of the lens, similar to what takes place after death, and which is the true source of what is called the Morgagnian fluid."

The discrepancy which exists in the opinions, and the variety in the descriptions of authors, as well as the number of names applied to this form of cataract, have apparently arisen from the inexact knowledge of pathologists, and the views formerly entertained with regard to the Morgagnian fluid. We read of it in books under the names of cataracta Morgagniana, cataracta lactea, cataracta puriformis, hydrops lentis crystallinæ, the Morgagnische staar of the Germans, and the cataracte interstitielle of French writers. Jannin was the first to distinguish it from milky cataract.

Pott says that the lens "is capable of being dissolved or becoming fluid without losing any of its transparency;" and, in a note to the foregoing paragraph, the same authority says: "Sometimes, from distemper, I have no doubt that the whole crystalline is dissolved into a fluid, still retaining its transparency."—(*Chirurgical Works*, Vol. III. p. 216.) This is a condition which I have not observed, and one on which I should like to obtain the opinion of the profession. Still, Pott seemed, according to the general tenor of his "Remarks on the Cataract," well aware of the softened state which the external layer of the lens assumes in some forms of cataract.

The younger Wenzel believed in an altered condition of the liquor Morgagni, without any sensible change in the structure, size, or transparency of the lens, and has given two cases in proof thereof. The first was that of a young man, operated on by his father in London, in 1765, the colour of the cataract being "extremely white." It must here be remembered, that the Wenzels lacerated the capsule while passing the knife across the chamber. "Before the section was completely finished, a milky substance issued out of the pupil, and escaped with the aqueous humour," leaving the parts behind the iris perfectly clear. On removing the dressing next day, the lens in its natural state of transparency and size was found between the edges of the eyelids. I much question, however, the accuracy of the observation with respect to its bulk. The second case which he has related occurred in Vienna, in 1774, in a young child. In it, the cataract had a "bright white colour." Extraction was performed; and, when the cornea and anterior capsule were divided, a milky fluid escaped with the aqueous humour, and vision was restored. Next day, the crystalline was found lodged between the lips of the corneal section, "transparent, colourless, and rather small." In a note attached by Mr. Ware, the translator of Wenzel, to the foregoing instances, he inclines to the belief that the fluid portion of the cataract was the periphery of the lens dissolved.—(*Wenzel's Treatise on the Cataract.* Ware's Translation, p. 201.)

Richter, in defining the seat of cataract, says: "It is either the crystalline lens alone, or the lens, the capsule, and the liquor Morgagni together; or it is the anterior part of the capsule, or its posterior part, or the liquor Morgagni simply. I have seen the last only once." But although this opinion was in accordance with the peculiar anatomical notions of his day, he seems to have been well acquainted with what we now know as Morgagnian cataract, and says, a little further on in the same chapter: "It happens now and then, that, as soon as the capsule is opened, a considerable quantity of a milky-coloured fluid flows out, and, soon after, follows a very small lens. The quantity of the fluid, and the uncommon smallness of the lens, render it probable that its ex-

ternal laminæ have been dissolved."—(*A Treatise on the Extraction of the Cataract.* English Translation, pp. 4, 7. 1791.) This appears to me the best and most faithful definition of the disease given at that time.

The chief authority on this subject, and that from which most English writers have drawn, is Beer, who, in the second volume of his *Lehre von den Augenkrankheiten*, published in 1817, has given, at page 291, a faithful description of the disease, the best method of diagnosing it, and also an engraving from a drawing made by himself. (Plate III. Fig. 3.) He says it is the very rarest form of cataract, and believed that the original seat of the disease was in the so-called Morgagnian fluid, which became suddenly turbid, the lens and capsule remaining transparent; but that very soon both these structures became opaque. In Beer's cases, the disease was produced very rapidly by the exposure of the eye to the fumes of mineral acids. In one instance, the turbid fluid was formed in a few hours.

Mr. Vetch says that this form of cataract "very seldom exists by itself, being quickly followed by opacity of the lens and capsule."—(*A Practical Treatise on Diseases of the Eye*, p. 119.) With respect to the capsular opacity, I have doubts; and the author does not give any cases of it which came under his own observation.

Dr. Mackenzie says that this "forms one of the rarest kinds of cataract."—(*A Practical Treatise on Diseases of the Eye*, p. 650.) He is not, however, so happy in his description of this disease as in the other parts of his most admirable and truly practical work. The only instance, he observes, "which I have seen, was in a lady, who embarked at Liverpool with her sight perfect, was very sick during the passage to Greenock, and, next day, landed there with a cataract in one of her eyes, such as I have not observed in any other case, and which corresponded to the description of Morgagnian cataract, except that I could see no change in the form of the opacity after rolling the eye." Having seen some cases in which a lens, dislocated by concussion, or a small penetrating wound, became opaque in twenty-four hours, I am inclined to think that the instance just related may be of such a nature. The straining, or violent sea-sickness, may possibly have destroyed the connections between the crystalline and the surrounding parts.

Mr. Middlemore not having seen the disease himself, it is unnecessary to refer to his work.

Mr. Guthrie described the disease in his treatise on the "Operative Surgery of the Eye," p. 246, not under the head of "Cataracta Morgagniana," in which affection he believes the capsule to be "always the primary seat of the complaint," but in the previous paragraph detailing the symptoms of fluid cataract.

Tyrrell tells us, that the fluid cataract is "also occasionally found in elderly persons; when, however, the cataract is rarely fluid throughout, but the circumference alone is liquid, and the centre is firm or hard," "I believe the cataract is rarely if ever formed in a fluid state, but that the change is effected in its consistence subsequent to the loss of transparency in its original structure. All the cases I have met with have been of long standing; and I have never been able to detect anything like this fluid change during the progress of the disease."—(*Practical Work on Diseases of the Eye*, Vol. II. p. 365.)

Mr. Lawrence, who, however, does not give any case of his own, doubts the "separate existence of such an affection," supposing that, in the true Morgagnian cataract, the lens remains transparent, which, however, does not seem to be the opinion of all the early authors who define this form of disease. Dr. Hays, of Philadelphia, in his recent edition of Mr. Lawrence's work, gives an account of the dissection of an eye, the previous history of which was, however, unknown, where the capsule appeared "more convex than natural; renitent, as if distended by a fluid; somewhat opaque, and very firm. While squeezing it, to ascertain what pressure it would bear, it broke, and some yellowish white fluid, resembling thin pus, or milk and water, and equal in quantity to about one-fourth the bulk of the lens, was discharged. The lens was of a light amber colour, somewhat smaller than natural, but perfectly transparent." (p. 620.)

Morgan writes: "Cataract sometimes is of a mixed character, the centre being hard and the circumference soft, or almost fluid; and there is no diag-

nostic mark between this and hard cataract."—(*Lectures on Diseases of the Eye*, edited by J. F. France, p. 179.)

In the 7th Fasciculus of the late Mr. Dalrymple's magnificent work on the "Pathology of the Human Eye," he has faithfully described the disease under the head of "Soft Cataract," in the following graphic passage: "Fluid cataract is met with at all ages, but is a somewhat rare species. It appears to consist of disintegration of the lens, and, when it occurs in elderly persons, the nucleus of a hard lens is often found in the interior of the capsule. This latter investment may or may not be also opaque. When the capsule is entirely transparent, it will generally be seen on dilating the pupil; and if the eye has been a short time at rest, that the colour is not wholly uniform; that at the lowest part the opacity is denser, while a certain degree of milky translucency may be seen at the upper part. If the eye be suddenly rolled about, or rubbed, the opacity becomes general and uniform, but clears in the upper part by rest and subsidence of the more opaque materials of which it will be found to be composed. It is by this means that we may distinguish a fluid from an ordinary soft cataract. On examining the contents of the capsule, when we have the somewhat rare opportunity of doing so, we find the fluid semi-opaque, containing the debris of the lens, which may easily be distinguished by the microscope; also many oil-globules, and some plates of cholesterine. In old subjects, as I have before said, the hard yellow nucleus will be found, having resisted the disintegrating process or softening of the lens."

Mr. Brodhurst, one of the latest writers on the subject of cataract, says: "This form is much more common in brutes than in man; indeed, it is not uncommon in the sheep and in the horse, but it is rare in man."—(*Of the Crystalline Lens and Cataract*, p. 122.)

The foregoing extracts contain the opinions and descriptions of the most esteemed authors in this country on the subject, and the modern French and German works have added little thereto. Those of Professor Sichel and Dr. Desmarres may, however, be consulted with advantage; and from the former learned and observant writer may be expected a special essay on the subject ere long. The following cases which I have operated upon have suggested the present communication:—

Mrs. H., aged 60, had been quite blind for several months, at the time I first saw her in 1847. She had well-formed cataract in both eyes; the only peculiarity which I remarked at the time was the more than usual muddy gray homogeneous colour of the cataracts, and their wanting that peculiar pearly-aceous hue common to gray-coloured cataracts where there is a uniform density. I saw her, however, but once before the operation, as she was very anxious to have it performed soon, in order that she might proceed to the Continent. In the June of that year, I extracted the cataract on the right side. The case was in most respects favourable, the eye healthy, but the patient very timid. The upper section of the cornea was completed with facility. Having allowed a sufficient time to elapse, which I am always in the habit of doing, in order that the patient may recover self-possession, and the eye by such rest lose the spasmodic action which affected it during the first step of the operation, I proceeded to open the capsule, when, on incising this membrane, an opaque fluid of a grayish white colour escaped in a considerable quantity. I then mentioned to the medical gentlemen present, that this was what was termed Morgagnian cataract, and that we should certainly find the solid nucleus of the lens within the capsule. By inserting Daviel's spoon or scoop into the external angle of the wound, making gentle pressure on the eye, and inclining the head to one side, the turbid fluid was eventually evacuated, and the pupil became clear. The dark amber-coloured lens then presented with its upper margin somewhat below the pupillary edge of the iris. Upon making the usual pressure and counter-pressure, the lens did not rise in the ordinary manner, but rather depressed behind the iris, while the clear space above its upper edge enlarged, and the vitreous humour presented. Having made several ineffectual endeavours to extract the lens, particularly by increasing the pressure from below, and finding that on each attempt the vitreous humour carrying the iris before it bulged into the section like a case in which the cornea has not been suffi-

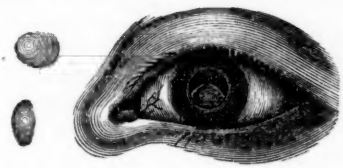
ciently divided, I desisted from any further endeavour to extract by pressure, and resorted to the following expedient: Having allowed some time to elapse, in order that the eye, as well as the patient generally, might become quiescent (a circumstance not sufficiently attended to, but of considerable importance in the management of extractions), I introduced the curette through the section, passed it into the clear space in the upper part of the pupil behind the lens, and then having turned its curved point forwards, fixed it into the back of the lens by pressing it against the iris and cornea, and thus transfixed, I was able with facility to extract the cataract without any loss of the vitreous humour. The lens was small, rather darker than usual, somewhat flattened, but perfectly smooth on the surface. This case recovered without any inflammation or other untoward circumstance, and the vision subsequently acquired was most perfect. This patient now resides at Liège, and is able to read and write as well as any person of her time of life.

The next case occurred shortly after, in the person of an old woman, who presented at the hospital on account of blindness, which, she said, had been coming on for a couple of years. The left eye had previously suffered from internal inflammation, and the pupillary edge of the iris was completely attached to the front of the capsule of the lens, which was quite opaque. Upon the right side there was a muddy, gray opacity behind the pupil, which advanced flush up with its edge, so as not to leave the usual shadow seen in most cases of cataract. Upon dilating the pupil, a dark orange-coloured cloud, which altered its position from time to time, but finally subsided towards the bottom of the capsule, was then plainly discernible. When the eye had been for some time at rest, the amber-coloured nucleus of the lens having fallen forwards against the capsule, confirmed the diagnosis that this was a case of Morgagnian cataract. In this instance, I determined to try the effect of opening the capsule, and allowing the opaque fluid or broken down lens to be absorbed before I proceeded to extract the nucleus. I therefore introduced a needle through the cornea, and freely lacerated the capsule, which was quite transparent. The opaque matter spirted into the anterior chamber, rendering the aqueous fluid turbid and of a milky hue. After a short time, the colouring matter gravitated to the bottom of the chamber as if it was not quite miscible with the fluid of that cavity, and then the dark amber-coloured lens could be distinctly seen behind the pupil, which had contracted during the operation. Violent inflammatory action, characterized by intense orbital pain and some irritability of stomach, ensued during the night, for which the patient had to be cupped, and get a full opiate. In the course of a few days all these symptoms subsided, the redness disappeared, and the patient left the hospital. At the end of six weeks she was readmitted. Having made the upper section of the cornea, I extracted the lens by simple pressure in the ordinary manner. No inflammation followed, and the woman recovered perfect vision, but died of cholera about a year afterwards.

With respect to the pain and sickness of stomach which ensued on giving exit to the fluid portion of the cataract in this case, Mr. Dalrymple's work, already alluded to, contains the following accurate observation: "There are some peculiarities which belong to this variety which it is necessary to mention. If an opening be made into the capsule, as in the operation of keratonyxis, we see the opaque fluid escape, and render turbid that of the anterior chamber. In a few hours after the operation, the patient is seized with nausea and violent vomiting, and with intense ocular or frontal neuralgia. (In one case, I remember to have seen the vomiting and neuralgia continue almost unremittingly for three days.) Upon what circumstance these phenomena depend, is wholly unknown to us. That it must, however, be closely connected with the poisonous presence of the contents of the capsule in a cavity in which absorption and reproduction are always going on, does not admit of a doubt: for, if such a cataract be removed by extraction, in which case the capsule generally escapes entire, no such state follows." In this latter observation, however, I cannot agree, as the capsule was not extracted in any of the four cases on which I have operated.

The third case was that of a female aged 50, from the West of Ireland, who

was admitted into the hospital in 1851, with well-formed cataract in both eyes. I had seen this woman in 1847, when there was an opaque nucleus in both lenses; but, as she could then see sufficiently well to follow her ordinary occupations, I advised her to defer having any operation performed until vision was more impaired; so that, in this case, there was an opportunity of examining the eye in an early stage of the disease, and of observing that the opacity commenced in the centre of the lens; its periphery and the capsule were quite clear. On the right side, when last admitted, there was evident hard cataract. On the left, the cataract presents a mixture of two colours, which, when the eye has been at rest and the pupil dilated, can be distinctly seen as a slate gray above, and a well-marked amber tint below. When the head is moved rapidly about, or the eye rolled or rubbed with the finger, these appearances alter, the amber colour appearing to have mixed with the gray. After a time, they again separate, and the shape of the solid nucleus of the lens can be distinctly seen below, as shown in the accompanying wood-cut taken from a coloured drawing made at the time: the line of demarcation between the solid opaque body and



the supernatant fluid being distinctly marked, and the semicircular mass proving its solidity. The anterior capsule was perfectly clear, but apparently in contact with the iris; it did not, however, bulge that membrane forward into the anterior chamber, as is stated by some writers to be a symptom of this form of cataract. The sclerotic was traversed by a number of long tortuous vessels, which, coming up from behind, dipped through it at about the eighth of an inch behind the cornea, particularly at the upper portion, where their entrances were marked by dusky olive-coloured spots, caused by the pigment beneath bulging into apertures enlarged by the previous distension of these congested vessels. These spots appeared chiefly upon the superior hemisphere.

Upon the 21st of May, I passed a needle through the nasal side of the cornea, and, turning its flat cutting edge towards the lens, made a crucial incision of the capsule, when the grayish fluid contained within that envelop immediately spirted out, and, mixing with the aqueous humour, rendered the whole anterior chamber turbid. After some minutes the eye was again examined, when the milky fluid was found to have gravitated to the bottom of the chamber, leaving the upper half clear; and in the lower angle formed between the cornea and iris could plainly be seen the *debris* of the disintegrated lens somewhat resembling an onyx. While opening the capsule, I could plainly feel the hard nucleus of the lens, which could afterwards be seen of an amber colour, occupying the pupil. Upon looking at the eye in profile, the cut portions of the capsule standing out into the anterior chamber were plainly discernible. The patient was removed to bed, and an opiate administered, having had, before she left the operation-theatre, the usual caution given to her—to inform the nurse if she experienced pain. During the night violent pain in the eye, attended by some sickness of stomach and retching, came on. The patient, however, made no complaint, as she was afraid of being bled or cupped, which she was aware, from the cases around her, was the usual practice on the accession of inflammation. It was not, therefore, until the afternoon of the following day that her state was discovered, when the resident was called to see her, on account of the violent retching which she then suffered from. Upon examination, all the symptoms of violent inflammation presented; the upper lid was red and œdematous; there was intolerance of light, mucous discharge, and profuse scalding lachrymation. Upon opening the lids, an extensive chemosis of the conjunctiva of a copperish red colour, shining, and apparently caused by the infiltration of

serum into the sub-conjunctival cellular tissue, bulged forward and overlapped the lower edge of the cornea. The cornea itself was of an ashy-gray colour, had lost its transparency, and looked like a piece of muffed glass. Previous to my arrival, several leeches had been applied to the temple and over the malar bone, as the woman obstinately refused to allow herself to be cupped or bled. In this unpromising state of things, I determined to evacuate the contents of the anterior chamber, and so lessen the pressure which threatened the destruction of the cornea. I accordingly, in the presence of Dr. Kirkpatrick and Mr. Thornton, the resident, introduced Walker's grooved knife obliquely upwards through the lower portion of the cornea, and thus rapidly evacuated the entire contents of the anterior chamber, consisting of a muddy gray fluid. I had the extreme satisfaction to observe, that almost immediately the brilliancy and transparency of the cornea were restored, and the iris and lens could be plainly seen, the latter partly dislocated and bulging the edge of the pupil upwards and forwards. The patient experienced immediate relief from the intense pain and feeling of distension from which she had suffered for many hours previously. I likewise excised with a curved scissors a portion of the chemosed conjunctiva, and thus allowed the fluid contained within its bag to become expressed. By this means, also, some slight local depletion was induced, and the congested vessels relieved. The effect, in this case, was almost magical, as I assured myself, before the operation that the grayness of the cornea was not caused by the colour of the fluid behind it, but was induced by pressure such as we may produce in an eye removed from the subject by squeezing it in the hand. Some more leeches were applied, extract of belladonna was plentifully smeared round the brow and orbit, and, when the leeches had ceased to bleed, a full opiate was administered.

Upon the 23d, the œdema of the lids and the chemosis had quite subsided; the redness of the globe was lessened considerably, and the patient was free from pain. Upon the 6th of June, the conjunctiva and sclerotic having resumed their natural appearance, I extracted the hard nucleus of the lens, which, as already stated, was bulging forward through the upper segment of the pupil. Some difficulties presented, owing to the irritability of the eye, the timidity of the patient, and the circumstance of the anterior chamber being so much encroached on by the distorted lens as to prevent a fair section of the cornea being made in the usual manner. I made the upward and outward section, and slightly enlarged it with a scissors. Upon pressure being made in the usual manner, the lens protruded between the lips of the incision; it was then transfixed with the curette and removed. There was no gush of vitreous humour, but the fluid which flowed from the eye, when felt between the fingers, was sticky and glutinous, showing that the vitreous humour was fluid, as I believe frequently happens in cases of Morgagnian cataract. The lens was of a dark amber-colour, oval, smooth, and rather more polished on its surface than cataracts usually present; the anterior surface somewhat flat, and the posterior rather more convex than natural, as shown in the previous illustration.

This case went on well; the woman recovered rapidly, without any untoward symptoms, and returned to the country seeing perfectly, and with a circular and mobile pupil.

The fourth case occurred during the present year in the person of a man aged 65. He was blind of both eyes; in the left there were evident traces of previous inflammation; the iris was altered in colour and structure, and its whole pupillary margin firmly attached to the capsule of the lens. On the right side the eye was more healthy, the iris natural, the pupil mobile and unattached; the lens was opaque, and of a peculiar uniform dull, homogeneous, drab colour. I suspected that this was a case of partially fluid cataract, but it did not at any time, even when the pupil was artificially dilated, present the appearance of Morgagnian cataract. In order to test the consistence of the lens, I introduced a fine needle through the cornea, and, having incised the capsule, found my suspicions confirmed, for a muddy, brownish-coloured fluid immediately rendered turbid the aqueous humour. Having already had experience of the consequence of allowing this irritating material to remain in the anterior chamber, I immediately allowed it to escape by introducing the grooved

knife as in the former case. Upon the chamber becoming clear, the brown lens was then seen completely filling the pupil. Six hours after the operation, violent pain came on, attended with the usual symptoms of internal inflammation, and accompanied by vomiting. Upon examining the eye, the aqueous fluid was found to have been regenerated, and there was no dislocation of the lens. The usual treatment was resorted to, consisting of local depletion, opiates, camphor, and the application of belladonna to keep the pupil dilated and prevent adhesion. In the course of a few days, a secondary attack of inflammation, chiefly engaging the sclerotic and iris, came on, for which tartarized antimony, calomel, and opium, in small and frequent doses, had to be administered. Under this treatment and occasional blistering, the iris resumed a healthy appearance in about two months. At the end of the ninth week, I proceeded to extract the lens, which proved to be of the usual diameter, but thinned from before backwards, and, like that in the third case recorded, was remarkably smooth and polished on its surface. I made a full section of the upper segment of the cornea, on completing which a greater quantity of fluid was evacuated than could possibly come from the anterior chamber. It was also a glutinous consistence, and continued to pour from the eye each time the pressure was made to evacuate the lens, evidently showing that the vitreous humour was fluid. I therefore passed the curette underneath the pupillary edge of the iris and behind the lens, and, by turning its curved point forwards, fixed it in the lens, and drew it forth without difficulty—a manœuvre to which I resorted in the first case as previously described. This man recovered without a single bad symptom, and returned to the country with very good vision.

The foregoing cases speak for themselves, and, having already occupied so much space in their recital, I do not think it necessary to offer many observations upon them. The chief point of practical importance which they inculcate is that of extracting at once, in all similar cases; as the presence of the fluid portion of the cataract in the anterior chamber, for ever so short a time, seems to produce a most deleterious effect.

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54. *Osseous Cataract.*—It has long been known to the profession, that the injurious effects of a foreign body embedded in the eye are not confined to the organ itself, but that the other eye is liable to be impaired, or even destroyed, by sympathetic inflammation. It may not, however, be so generally known, that the textures of the eye itself, under certain pathological conditions, may act as foreign bodies, producing the same distressing symptoms, and requiring operative means for their removal. This fact is well illustrated by a case which lately occurred in the hospital, under the care of Dr. Taylor.

The patient, a man 35 years of age, received a punctured wound of the eyeball, fourteen years ago; inflammation ensued, vision was totally lost, and the eye gradually became atrophic. He suffered no further inconvenience until a few months previous to his admission, when the injured organ became exceedingly troublesome; there was constant conjunctival inflammation, intolerance of light, spasm of the eyelids, and frequent and severe attacks of pain of a neuralgic character. His chief source of anxiety, however, was the condition of the other eye, the sight of which had become so weak as to prevent his working for more than a few minutes at a time.

The injured eye was about one-fourth less in size than its fellow, and soft and flaccid to the touch; the cornea was dull and glassy-looking, and did not measure more than one-fifth of an inch in diameter; the conjunctiva was covered with large, tortuous vessels, through which a faint pink ring could be seen encircling the cornea; the spasmodic closure of the eyelids rendered it difficult to obtain a clear view of the pupil, but a cataract, of a dull straw colour, could be seen lying in the posterior chamber, and pressing apparently against the iris.

Various palliative remedies were tried, but without affording permanent relief, and, as the vision of the other eye became rapidly weaker, the patient willingly consented to have the cataract, which was evidently the source of the irritation, removed.

The operation was accordingly performed on the 14th July. After putting

him under the influence of chloroform, Dr. Taylor divided the cornea by the upper section, as in the ordinary operation for extraction, and, as the opening thus made was very limited, owing to the atrophied condition of the cornea, enlarged the incision on each side, through the sclerotica. On introducing the curette, the instrument grated as against a piece of stone. The cataract was firmly adherent to the subjacent parts; but the iris was free. Pressure had not the slightest effect in dislodging it; it required considerable manipulation and no small degree of force before it could be removed by a small but strong hook; it came away entire, and without any escape of the vitreous humour.

The man suffered a good deal of pain during the first night, but not afterwards; the wound healed rapidly; the irritation completely subsided in the other eye; he left the hospital in a week, and three weeks after the operation he was again at work.

The cataract was of a straw colour, semi-globular in form, smooth and regular in front, rough, tubercular, and flattened posteriorly where it had been adherent. Here a small portion of the lens in a softened condition was visible, and when this was removed the osseous deposit was found to have involved not merely the capsule, but the greater part of the lens also, which was converted into a solid mass of stony hardness. This condition of the lens is of very rare occurrence. Mr. Wardrop, Mr. Tyrrell, and M. Desmarres have each met with one instance, but in every other case of osseous cataract, so far as we are aware, the change has been confined exclusively to the capsule, forming a thin shell, which, by breaking under the instruments employed for its removal, adds to the difficulty of the operation.

Our limited space will not permit of any further remarks upon several interesting points in the pathology and treatment of osseous deposits within the eye; but we cannot conclude without calling especial attention to the firmness with which the lens adhered to the subjacent parts in this, as well as in several other instances recorded in the journals, a complication not alluded to by any of the systematic writers, with the exception of M. Desmarres, and one which might occasion considerable embarrassment to an operator ignorant of the possibility of its occurrence.—*Med. Times and Gaz.* Feb. 26, 1853.

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55. *Abscess within the Orbit, producing Chemosis, by which the Vitality of the Cornea was destroyed, and the Eye lost—Secondary Deposit of Pus in the Brain, causing Death.*—The patient, a tall and slender girl, 15 years old, was sent to Mr. Walton, by a surgeon in the city, on the 17th of December last, in the following state: There was an abscess, but not a large one, pointing just under the upper and inner angle of the left orbit. The palpebræ were a little swollen, the upper one somewhat shortened, and the tarsus elevated, from the effects of former abscesses. The eyeball was entirely surrounded by a very prominent chemosis, that covered all the cornea, except a small central bit, which was quite bright. Vision was unaffected, but there was intolerance of light, caused by the constant exposure of the eye, for the lids could not be closed on account of the injured palpebra and the chemosis, and to remedy which she wore a bandage. There was a little, but only a very little, purulent secretion from the conjunctiva.

The history runs thus: Four years ago, the girl had an abscess at the upper part of each orbit; they burst, and healed after discharging a few weeks. There were several recurrences of these; the last interval being a duration of about three months. Now, for the first time, only one orbit is the seat of suppuration.

Mr. Walton pointed out to the mother of the girl the necessity of the abscess being opened, and the chemosis freely divided, and the imminent danger to the eye in case the latter was not executed. Such treatment, however, was positively objected to by her.

On the 21st, three days after, she was again brought to Mr. Walton, in a very debilitated state; when he last saw her she was not feeble. The abscess had burst, and the chemosis had subsided a little, but, unfortunately, the cornea had become opaque and ash-coloured. Being in great pain, she now desired to have anything done that might relieve her sufferings and restore her

sight. Mr. Walton divided the chemosis, to afford a chance, if, indeed, any remained, of saving the cornea; but its vitality was lost, and the greater part of it separated while some blood was being wiped from the surface of the eyeball, leaving the iris and the lens exposed. He also enlarged the abscess aperture. In four days the pain in the eye had ceased, and the chemosis had nearly subsided, the abscess discharging all the while. The poor girl now thought that her sight would be saved, for she could discern large bodies; but this respite of vision was soon lost by the pupil closing. She continued to improve in health, and the abscess secreted less.

On the 1st of January she complained of occasional slight headache; on the 3d, she kept her bed, yet took her food with a tolerable appetite. Her father went to fetch her some drink, at her own request, and when he returned in a few minutes, she was dead. Mr. Walton obtained leave to examine the head, but that only, and has kindly allowed us to make the following condensation from his notes:—

Post-Mortem Three Days after Death.—The brain was first examined. The surface, that is, all which was visible by the removal of the calvarium, was not abnormal, nor were its membranes unhealthy; but within the centre of the anterior lobe of the left hemisphere, was a deposit of about a teaspoonful of pus, the cerebral matter around being slightly broken down. Attention was carefully directed to ascertain if there was any communication between this and the abscess in the orbit, but none was detected. The parts passing through the several orbital foramina were perfectly healthy, and the only other indication of disease within the skull was the readiness with which the dura mater could be separated from the orbital plate of the frontal bone. The orbit was now inspected. Between the periosteum and the roof of this cavity the original abscess was found to be situated; less pus was here than in the brain. The several tissues in the orbit were perfectly normal. The eyeball was partly collapsed, but its tunics were natural. The entire portion of the upper wall of the orbit, including the superciliary ridge, presented the appearance that is characteristic of chronic inflammation of bone, and the superciliary ridge of the other orbit exhibited the same, but in less degree.

The following points in this peculiar case demand attention:—

1. The symmetrical appearance of the primary affection, each orbit having been attacked alike; this being significant of the constitutional origin of the complaint.

2. The purulent, or secondary deposit, as such collections are generally called, within the brain; the principal peculiarity being the rareness of such an occurrence in this organ.

3. The mildness of the cerebral and general symptoms in conjunction with so great a lesion of the brain, for there was almost an absence of constitutional disturbance—if the report of the mother be accredited—there being no febrile manifestations, and but little depression, after the severity of the acute attack of suppuration in the orbit had subsided, and at the time when the cerebral disease was going on; and but slight headache, without any paralysis, and without sickness or mental aberration.

4. The production of chemosis, from abscess within the orbit, to a degree sufficient to destroy the cornea, and by that the eye. This, bearing as it does on what may be termed the surgery of the case, admits of several practical observations.

The cases in which chemosis is usually injurious, are those of purulent ophthalmia, whether arising from inoculation, injury of a mechanical nature, atmospheric, or other causes; and in those the conjunctiva seems to be the structure primarily affected. Here, however, is a remarkable exception; the conjunctiva was raised around the cornea, and partly covered it, as a secondary result of an abscess in its vicinity. Perhaps a similar effect is produced in those instances of destruction of the eyeball, in phlegmonous erysipelas of the head and face. The eyelids being closed by their tumefaction, precludes a sight of the state of the eye, and the changes that are being effected in it.

The opportunity of dissecting the eyeball in the case under consideration, whereby all its proper tunics, except the cornea, was discovered to be healthy,

demonstrates, in the most direct and unmistakable manner, the fact that the destruction of the organ was directly produced by the mechanical interference with the nutrition of the cornea by the chemosis, its supply of nutrient material being partly or entirely arrested, a result which must always supervene when chemosis arrives at a certain density, for it is the nature of the fluid effused in the sub-conjunctival areolar tissue on which the effect of the chemosis depends. Mere effusion of serum, although the conjunctiva may be considerably raised, matters nothing. Very different is it, however, when the effusion is of a fibrinous nature, the result of an attack of acute inflammation.

Although, through the perverseness of the poor girl, the period for the effective treatment of the ocular disease was allowed to pass, and there is no scope for clinical remarks concerning the result of the measure adopted—namely, that of incising the conjunctiva—it may not be out of place to describe Mr. Walton's method of executing this, the most effective manner, as modern practice shows, of dealing with that dangerous state of the eye.

Mr. Walton employs a small curved knife, as he considers a straight one insufficient for the purpose, because it cannot be carried effectually through the chemosis, that is, through the entire extent, without wounding the lid, and, perhaps, the eyeball also; and it should be borne in mind, that the result of the operation mainly depends on the manner of its execution.

The eye is fairly opened, the upper lid raised with the lid retractor by the operator, who stands behind the head of the patient, the lower depressed by an assistant. The curved knife, held vertically, is introduced at the edge of the chemosed conjunctiva (Mr. Walton usually divides the lower part of the chemosis first), and carried along the surface of the cornea and the sclerotica to the sinus of the lid, the handle then depressed, so that the palpebral chemosis may be reached by the instrument; this is then traversed by the blade, and the whole divided by an outward stroke. Three or four incisions are thus made. The division of the upper portion of the chemosis is not so readily effected, in consequence of the different construction of the lid, and the necessity of using the retractor; but the impediment is readily overcome, by applying the retractor first on one side of the lid, to make room for the knife, and then shifting it to the other. An active and intelligent assistant is required to use the sponge frequently, that the operator may have a constant view of the course of the knife; and, unless the eyeball is freed from blood, it is not possible to enter the knife safely or correctly.—*Med. Times and Gaz.* Feb. 26, 1853.

MIDWIFERY.

56. *The Esquimaux Female Pelvis.*—Dr. James Struthers exhibited to the Edinburgh Obstetrical Society (April 14, 1852), the pelvis of an Esquimaux woman which he had received from Mr. George C. Pirie, of Dundee, who obtained it last summer while acting as surgeon to a whaling vessel. It was found near Cape Hooper, on the coast of Davies' Straits, in latitude 68.6 N., longitude 64.36 W., under a cairn of stones—the usual mode of burying there. As a specimen of the pelvis of this division of the Mongolian race, it is interesting from its rarity, but chiefly from the unusually large dimensions of the brim, cavity, and outlet.

In its form, it approaches the square, the distinctive character, according to Weber, of the Mongolian pelvis; the transverse diameter exceeding the conjugate by 1½ inch.

The brim is 16½ inches in circumference, being 2 inches more than in a large European pelvis. The diameters of the *brim* are:—

Transverse, . . .	6 inches
Conjugate, . . .	4⅜ "
Oblique, ...	5⅝ "

The first being ⅛, the second ⅛, and the third 1⅛ inch larger than in the standard assumed by Ramsbotham.

The diameters of the *cavity* are:—

Transverse, . . .	5⅛ inches.
Conjugate, . . .	5⅝ "
Oblique, ...	5⅛ "

An increase over the standard of 1 inch in the antero-posterior, and of ½ inch in the two other diameters. The *outlet* is also very capacious; the transverse diameter being 5⅛ inches; the conjugate about the same; while the pubic arch is unusually wide. The depth of the cavity is much the same as in the European pelvis.

This being the only specimen of an Esquimaux pelvis that Dr. S. has had an opportunity of examining, no general deduction of course can be drawn as to the pelvis of the Esquimaux being larger than that of the European. It is worthy of observation, however, that parturition among the Esquimaux, whatever be the cause, is by all accounts much more rapid than with us—so rapid, indeed, that, after making all due allowance for the child being smaller, which is the case, and for the half savage condition of the natives, we can scarcely avoid the inference that something may be due to the maternal passages being wider in the one race than in the other. Crautz, in his *History of Greenland*, states that parturition among the Esquimaux is both rapid and easy; and Mr. Pirie, during his residence there, received many accounts to the same effect. Mr. Pirie also collected some curious information as to the manner in which the accouchements are conducted, the leading feature of which is that the whole process is left entirely to nature. Till within a few hours of labour, the woman goes about her usual duties. As soon as she feels unwell, she retires to a skin hut built for the purpose, which is so small as to confine her almost entirely to the recumbent posture. No one is allowed to be present while labour is going on; and the woman, it is stated, generally makes her appearance within the hour, carrying the child in the hood attached to her dress.

It is the general belief that the child is not separated from the placenta until the latter is expelled, and that the division is effected by the mother gnawing through the cord. The Greenland women, according to Crantz, are not very prolific, seldom having more than three or four children, between each of which there is generally an interval of three years. When told of the fecundity of Europeans, they compare them contemptuously to their dogs. Miscarriages, twins, and monsters are very rare; and scrofula and rickets are almost unknown. The children subsist for three or four years solely on the mother's milk; there being no other nourishment suitable for them. If another child be born before the mother has ceased nursing (not an uncommon occurrence), the latter frequently dies in consequence of being deprived of its supply of milk; and should the mother die while the child is young, it, as a necessary consequence, does not long survive her.—*Monthly Journ. of Med. Sci.* Aug. 1852.

57. *Indian Hemp as an Oxytocic.*—Dr. John Grigor has been induced, by the reports of Drs. Churchill, Simpson, and Christison, to try the powers of the Indian hemp as an oxytocic. He has employed the tincture of cannabis indica (24 grs. ext. to ℥j) in sixteen cases of labour. "In nine of these," he says, "though given to the extent of ℥ijss, in separate doses, of 25 and 35 drops at a time—in some in quick succession, in others at longer intervals—I could not perceive any increased uterine action, nor the slightest physiological change in any one way during labour or afterwards, with the exception of one instance of sleep (much required at the time) in a lady, far from strong, confined of her third child, and much exhausted by inefficient throes, in whom the third ℥ss dose completely arrested the pains and induced sleep, which continued for an hour, when she awakened refreshed. Labour then set in in earnest, chloroform was given, and the child was speedily born. These nine cases made good recoveries.

In the seven cases in which the tincture of hemp succeeded so well with me, five were cases of first confinement, of satisfactory, though very slow, labour, and phlegmatic temperament. I have noticed the contractions acquire great increase of strength and frequency immediately on swallowing the drug, and have seen four or five minutes elapse ere the effect ensued; and if none was

induced within the latter space of time, I have not observed its effects at all afterwards, notwithstanding repeated doses. In these few cases, I had opportunities of giving it from the time when the os uteri would admit the point of my finger till the expulsion of the child. Judging from experience, I believe that, in appropriate cases for the use of this stimulant, and when effectual, it is capable of bringing the labour to a happy conclusion considerably within a half of the time that would otherwise have been required, thus saving protracted suffering to the patient, and the time of the practitioner.

I have not observed it to possess any anæsthetic effects. I have used it in two cases along with the inhalation of chloroform, and I did not observe that that agent interfered in any way with its action.

When the effects of the hemp were subsiding, I have been able to recall and keep up "the good pains" by the addition of ten drops given from time to time. I consider the expulsive action of the cannabis to be stronger than that of the ergot, but less certain in its effect; and it has the advantage over the ergot, of usefulness in the early stage of parturition. I believe that the previous ineffectual administration of the hemp does not interfere with the after exhibition and full working of the ergot.

Such are my brief observations on the new and interesting use to which Bang, or the Hachisch of India, has been put. In the few cases in which I thought its administration safe, and not counterindicated by malformation, etc., you have given the result of those in which this effect was, and was not, displayed. I cannot conclude these remarks without entering my dissent against the use of uterine medicinal stimuli in general, on account of the frequent difficulty of accurate conception of relative dimensions of parts, etc. Yet all obstetricians must acknowledge that, in many cases, such stimuli are indispensable; and to be possessed of one capable of so early application, is decidedly a matter of much importance. I would also notice that, in labour, whether the cannabis shows its peculiar effect on the uterine contractions, or not, there seems, as in tetanus, etc., to be a very great tolerance of the drug—nor have unpleasant consequences, so far as I have seen, appeared afterwards; and, whilst it is acknowledged as a powerful controller of inordinate muscular spasm, it is equally in many cases, a powerful stimulant of the uterine muscular fibre in labour, if not in the unimpregnated state.—*Monthly Journ. Med. Sci.* Aug. 1852.

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58. *Observations on the Induction of Premature Labour before the Seventh Month of Pregnancy.* By Robert Lee, M. D. (Proceedings of Royal Medical and Chirurgical Society, Feb. 5, 1853).—In the year 1812, in the third volume of the *Transactions* of the Society, Dr. Merriman had published a paper entitled "Cases of Premature Labour Artificially Induced in Women with Distorted Pelvis, to which are subjoined some Observations on this Method of Practice." The author thought it significant that in thirty-two volumes of the *Transactions*, embracing a period of forty years, there did not occur the history of a single case to illustrate this important rule of practice; while in these volumes there were reports of ten cases of Cæsarian operation. Of the safety, efficacy, and morality of inducing premature labour, in conformity with the rules inculcated by Dr. Merriman, the author thought most British and some foreign practitioners were convinced; but in respect to the induction of premature labour before the seventh month and in first pregnancies, to obviate the danger of craniotomy and the fatal effects of the Cæsarian section, in cases of great distortion of the pelvis, little had been said by writers on midwifery. To justify the practice, which the author regarded as equally safe, efficacious, and moral, before as after the seventh month of utero-gestation, and in a first as in any subsequent pregnancy, he submitted the history of a successful case, which was attended with peculiar complications and formidable difficulties.

In October, 1849, with Mr. Booth, of Queen Street, Westminster, he saw Mrs. S——, who had been in labour forty-eight hours, and whose pelvis was distorted in the highest degree from mollities ossium. After perforating the head, which had not entered the brim of the pelvis, and by tearing in pieces the bones with the crotchet, delivery was accomplished after two hours' violent ex-

ertion. The partially dilated state of the os uteri greatly increased the difficulty and danger of the operation. The patient recovered without any unfavourable symptom. In December, 1852, the author learned from Mr. Booth that the patient was again pregnant; and in the fifth month, some diagnostic symptoms of pregnancy being absent, any interference was postponed for another month. In January, 1853, the movements of the fœtus could be distinctly felt, and the necessity for immediately attempting to induce premature labour was obvious and urgent. The great distortion of the pelvis (the tuberosities of the ischia were almost in contact, and the sacrum projected forward so as nearly to touch the front of the pelvis) presented unusual difficulties, seen in reaching the os uteri for the purpose of introducing the stiletted catheter to puncture the membranes. After a time, the fore and middle fingers of the left hand were passed into the vagina, and the anterior lip of the os uteri was touched with the tip of the forefinger; the instrument was then guided into the cavity of the uterus, and the membranes punctured. The liquor amni continued to flow till the morning of Friday, the 7th of January, when labour pains came on. At 2 P.M. the os uteri was so much dilated that the points of two fingers could be introduced, and the nature of the presentation ascertained. It was not the head, but whether shoulder or nates could not be determined. At 7 P.M. the right hand was hanging out of the external parts, and the shoulders and thorax had sunk deeper into the pelvis. On a careful examination, it was found that the tuberosities of the ischia had been pressed considerably apart, the short diameter of the outlet being thus increased; and there was little doubt but that the bones at the brim had also yielded somewhat to the pressure. The shoulder being brought down as much as possible, the viscera of the thorax were removed by the crotchet; and after fixing its point in the spine as near as possible to the pelvis, after strong traction, the nates and lower extremities were drawn through, and the other superior extremity soon followed. But little difficulty was experienced in crushing or extracting the head. The placenta soon followed. Three weeks after the delivery, the author received a satisfactory communication from Mr. Booth, stating that the patient had progressed very favourably.

Dr. Lee said that his object in narrating the case was to bring under the consideration of the Society the propriety of inducing premature labour, in certain cases, before the seventh month of pregnancy, to prevent the necessity of resorting to other and dangerous operations. With respect to the production of premature labour after that period, full discussions had taken place. With regard to the question put by the President, he might remark that it was most difficult to determine the exact measurement during life, but that he had never seen a pelvis with a less diameter than in the present case; and after this he felt confident that if premature labour was induced before the seventh month, no case could occur in which delivery could not be effected. In this case, also, it might be remarked that the diameter of the pelvis had been increased by the pressure of the head of the child, in consequence of the bones being affected by mollities. This might reasonably be expected to occur in cases of a similar kind. He wished to know if any one objected to the course of proceeding which he had recommended previous to the seventh month, to prevent the necessity of craniotomy, or of the Cæsarian section. He might here remark that he had the best reason to believe that one fatal case of Cæsarian section had occurred since the discussions on that subject before the Society; and this, too, in an instance in which it would not have been so difficult to effect delivery as in the case before the Society. That operation, however—he meant the Cæsarian section—had not been recorded.—*Lancet*, Feb. 19, 1853.

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59. *Induction of Premature Labour in Cases of Deformed Pelvis.*—Dr. Atthill read a paper on this subject to the Dublin Obstetrical Society. He drew the attention of the Society to the old methods of induction, and enumerated the various objections to each of these modes. He then detailed a case in which the douche bath (after the manner of the Vienna Lying-in Hospital) was successfully used. The case was that of a woman four feet and a half in height, and greatly deformed from angular curvature of the spine, the result of caries

of the vertebræ, from which she had suffered when twelve years old. The curvature included the last dorsal and all the lumbar vertebræ; and there also existed an appreciable diminution in the pelvic space. In September, 1849, she was admitted into the Rotundo Lying-in Hospital for her first confinement, when it was found necessary to lessen the head, after a rather protracted labour. In September, 1850, she was again admitted, and this labour was but a repetition of her first. It was then explained to her that she could not give birth to a living child at full term, and she was recommended that, if she again became pregnant, she should come into hospital when she was seven months gone with child, and submit to the induction of premature labour. Accordingly, in June, 1851, she again presented herself in the seventh month of gestation, but before any steps could be taken her husband removed her, having been told that if she submitted to any operation she might die; so that she was lost sight of until the 26th of August following, when she was brought into hospital in strong labour, and again for the third time the crotchet had to be used. On being discharged after her recovery, the necessity of her presenting herself at the termination of the seventh month (should she again become pregnant), was strongly urged upon her; and she acted according to this advice, for she came to the hospital on the 10th of September, 1852, being seven months pregnant. It was now determined to try Kiwisch's method of induction, the douche bath. The apparatus used in this case was a tin vessel, capable of containing two gallons of water, and to this was affixed a flexible tube, furnished with a stop-cock, terminating in a bone nozzle about five inches in length. The vessel was raised about five feet above the bed on which the patient lay supine, the pipe of the tube was introduced into the vagina, the stop-cock turned, and the stream directed against the os uteri by means of the index finger inserted along with the nozzle. Saturday, the 18th of September, was the date of the first application, and even this seemed to produce a marked effect, for, on examination immediately after, the os uteri felt soft and relaxed. The douche was repeated, morning and evening, regularly, until the following Friday (except on Wednesday night, when the tube by some accident got out of order). After the second application, the os began to dilate, and continued to increase a little in size on each application, until after the sixth douche, when it had attained the magnitude of a half-crown, but then it ceased to enlarge. On Friday afternoon, having been subjected twelve times to the douche, she complained of pain in her back, and asserted that she felt certain her labour was approaching. Next morning, at 11 o'clock, the pains came on regularly, though feebly; at 7 P. M., the membranes ruptured, the os being fully dilated, and the pains grew most powerful; the head gradually descended into the pelvis until 9 P. M., when it almost rested on the perineum, but, although uterine action was strong, it ceased to advance further; and at 11 o'clock, no progress having been made for two hours, she was delivered by the forceps (while under the influence of chloroform), of a small, living female child about the seventh month. The two first days it had to be spoon-fed, but afterwards it took the breast freely. The mother recovered without the slightest drawback, and she and the child went out well on the ninth day. Dr. Atthill said that, comparing this case with those given by Dr. Arneth, of Vienna, it appeared that it required the exact number of douches (viz., twelve) to bring on labour, which he found to be the average. The height from which the water flowed was, however, much less than that which he directed; and Dr. Atthill consequently considered that any great height was unnecessary.

The result of this case Dr. Atthill thought most satisfactory, and to the method of induction he considered there could be no valid objection, the worst result being failure, and that this was very unlikely to occur, for, out of the six cases recorded by Dr. Arneth, in only one did the douche fail. Dr. Atthill preferred this mode of induction to any of the other plans recommended by authors, because no possible injury could be done by the employment of the douche bath to either mother or child; and in its application it was simple in the extreme. He concluded by remarking, that, since writing the foregoing paper, he had seen the details of a case in which the douche had been successfully applied by Dr. Tyler Smith, of London. [See preceding Number of this *Journal*, p.

249]; and the only difference that existed in Dr. Smith's case from that just related was, that alternate douches of hot and cold water were used by Dr. Smith; and that this might have been the reason why only five applications were necessary; but that this fact was by no means proved, for in one of Dr. Arneth's cases only two were required. Dr. Atthill considered, however, that it would be worth while to test the fact by further observations.

Dr. CHURCHILL remarked, that Dr. Simpson, of Edinburgh, was in the habit of using effectually a simple form of syringe for such purposes, which he would consider preferable to the syphon douche, as being more simple and more easily applied; it generally brought on labour after four, five, six, or eight applications.

Dr. M'CLINTOCK stated, that the only objection which, in his opinion, could be urged against this method of inducing premature labour was, the facility, certainty, and safety with which it could be made use of for criminal purposes, were it generally known to the public.—*Dublin Quarterly Journal*, Feb. 1853.

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60. *On Degeneration of the Placenta at the End of Pregnancy.* By ROBERT DRUITT, M. D. (Read before the Royal Medical and Chirurgical Society, Jan. 25).—The subject of degeneration of the placenta had been already brought under the notice of the profession by Dr. Robert Barnes, but before the real value of this subject of investigation could be estimated, the author thought the following questions should be answered—viz., first, how far, and under what circumstances, could it be regarded as a normal condition? secondly, how frequently, and to what extent, might it be present without any ill consequences ensuing? The author defined the term degeneration to express the loss of those characteristic parts or marks of any given structure which were most intimately connected with its functions. Such a change, Professor Paget had remarked, bore witness rather to a deficiency than to a perversion of nutrition. There was no development of any new organic form; but, instead, a tendency to infiltration with oil-corpuscles or with earthy matter. In structures whose existence was shorter than that of the system of which they formed a part, or in organs which had occasional periods of activity, such changes were met with at the termination of those periods; and it might be produced in any organ by depriving it of the exercise of its functions. Thus degeneration was to be looked upon as a part of the natural as well as of the morbid history of the animal economy. Now, the placenta, being *par excellence* a temporary organ, might fairly be expected to be prone to degeneration at the close of the term of its office; and this the author believed to be true, and that almost every placenta expelled at the full time exhibited some signs of that change. The fact was notorious, that various deviations from perfect structure were constantly found in placentæ; in favourable cases the fact was passed by as of no consequence, but in unfavourable cases, the placenta being more closely scrutinized, these appearances had been attributed to inflammation and effusion of lymph. The author confessed to have fallen himself into the error, till the paper of Dr. Barnes revealed the true nature of these alterations; and being soon convinced that degeneration of the placenta was by no means of uncommon occurrence, he determined to institute a more strict inquiry, the result of which was embodied in the present communication. For the sake of a clear definition of the term employed, the author briefly detailed the histological elements of the placental structure, and thus observed that the forms of degeneration commonly seen in the placenta were the earthy and the fatty. The earthy was so common, that he doubted whether any full-grown placenta could be met with that did not exhibit traces of it. These earthy deposits, examined microscopically, were seen as minute transparent crystals within the investing decidual cells of the fœtal villi. This earthy matter was quickly and entirely soluble in acetic acid, with copious effervescence. The fatty degeneration was as common as the earthy, and was generally met with in the same placenta, though not in the same parts, nor in equal degree. It had been most fully and accurately described by Dr. Barnes and Dr. Hassall, and the author added some minute details of the progress of the fatty deposit in the pre-decidual cells, in which it commenced first as single globules, and then aggregated in clusters in the cells.

In some cases the oil did not increase in proportion to the degree of degeneration; in fact, neither the oil globules nor the earthy crystals were to be looked on as more than accidents, and not as constituting the essence of the degeneration: but whether so or not, the affected tufts became tallowy, exsanguine, brittle, and difficult to unravel; whilst in the extreme stage there was produced a white, glistening, translucent, amorphous substance, of gristly consistence, and breaking in all directions into sharp angular fragments. But in this apparently structureless substance the fœtal vessels might, by careful examination, aided by maceration, be detected cropping out here and there on the broken surfaces. In this extreme degree of degeneration there was very little oil. Acetic acid caused the mass to swell up and become translucent. The author then gave the details of the microscopic examination of thirty placentæ occurring consecutively in his own practice; in each, either fatty or earthy degeneration had taken place. He conceived that the true explanation of these phenomena must be looked for in the general analogies which regulate the growth of temporary organs. The placenta was the nutrient organ of a parasite, which inhabited its parent till it had attained a certain degree of development. Its cells, like other cells in the condition of active growth, had the power of appropriating nourishment from any parts with which they were in contact. It was probable that the size and condition of the placenta bore a strict proportion to the wants of the fœtus and to its powers of assimilation, and that, on the one hand, a placenta of perfect structure showed that the functions of the organ were actively carried on; on the other hand, degeneration testified either that the organ was originally formed on an unnecessarily large scale, or that the fœtus could not appropriate the supplies furnished by the entire organ, or that the work of development being nearly completed, the active employment of the whole organ had become unnecessary, and portions of it fell into decay. The author offered the three following conclusions as the result of his investigations: 1. That incipient degeneration was a normal condition of the placenta at the end of pregnancy. 2. That it arose from partial cessation of the active functions of the organ when the fœtal development was nearly completed. 3. That when it occurred in the earlier months, it probably arose from some antecedent want of nutritive force in the fœtus, or by its death. On the subject of inducing premature labour, on the ground of placental disease, the author summed up his communication in the emphatic words of Wilde: "Nostrum est, summo studio cavere, ne abortus expediatur vel immo excitetur, sed omni arte potius intendere ut prospera et immunis restituatur graviditas; quippe quâ unâ, duplicis vitæ, lætam spem et sinceram salutem recuperavimus."—*Lancet*, Feb. 12, 1853.

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61. *Albuminuria in Pregnant Females; its Symptoms, Causes, Results, and Treatment.*—[Much attention has of late years been devoted to this affection, and a number of works have recently appeared in relation to it. In the third No. of the *Association Medical Journal*, there is a very interesting digest of some of the principal of these,[1] and which we transfer to our pages.]

[1] 1. Lever, John C. W., M. D. Cases of Puerperal Convulsions, with Remarks.—*Guy's Hospital Reports*, 2d series, vol. i. p. 495.

2. Devilliers and Regnault, MM. Recherches sur les Hydropisias chez les Femmes Enceintes.—*Archives Génér. de Médecine*, 1848.

3. Cormack, John Rose, M. D. Dependence of Puerperal Convulsions on Toxæmia; Explanation of the more common occurrence of Renal Convulsions in Primiparæ.—*London Journal of Medicine*, June, 1849.

4. Blot, M. Hippolyte. De l'Albuminurie coincidant avec l'Eclampsie.—*L'Union Médicale*, Oct. 10, 1850.

5. Litzmann, Professor (of Kiel). On Bright's Disease,* and Convulsions before, during, and after Labour.—*Deutsche Klinik*, May, June, and July, 1852.

* The term "Bright's Disease" is very frequently used by continental writers in a wider sense than by the English. They appear to express by it all conditions of the kidney in which albumen is found in the urine—from simple congestion up to advanced structural disease.

Albuminuria in pregnant and parturient women has generally been noticed in reference to convulsions, for the most part occurring in primiparæ. The investigation of Dr. Blot and Professor Litzmann were made with a view to determine its frequency during pregnancy.

Dr. Blot found it present in 41 cases out of 205, primiparæ being chiefly affected.

Dr. Litzmann has examined the urine of 131 females; 79 during pregnancy, 80 during labour, and 80 after delivery. He found albumen present in 37, and absent in 95. Of the 95 whose urine contained no albumen, 53 were primiparæ and 42 multiparæ. Of the 37 who had albuminuria, 26 were primiparæ and 11 multiparæ; two were pregnant with twins. Of the 37, the urine of 16 was found to be albuminous during pregnancy; in 10 of these the albumen continued some days after labour; in 4, it disappeared before confinement. In 4 women in whom albuminuria was found after labour, it had probably existed during pregnancy, although the urine had not been examined.

Dr. Litzmann points out that albumen may be present in the urine from vesical catarrh. This can sometimes, but not always, be referred to pressure on the neck of the bladder during labour. It is distinguished from renal albuminuria by the absence of fibrinous casts of the uriniferous tubes, which he found in most of the cases in which the albuminuria had reached a high degree, towards the end of pregnancy.

Symptoms. Nothing certain is known as to the time when the renal affection commences. It usually begins insidiously, and increases slowly; its commencement is, perhaps, rarely denoted by any remarkable symptoms. The only constant sign by which renal disorder during pregnancy is denoted, is the state of the urine. Dr. Litzmann has not observed albumen before the eighth month; but Devilliers and Regnault found it in the sixth. The quantity of albumen is usually very conspicuous, and increases as the time of delivery approaches. In proportion to the intensity and duration of the morbid process in the kidneys, are found casts of the uriniferous tubes in greater or less quantity, the epithelium lining them being sometimes normal, sometimes in a state of fatty degeneration. In the milder cases, the tube-casts are often found just at delivery, or soon after. Careful examination will probably in all cases detect a not inconsiderable diminution of the quantity of urine. Pain in the loins is not diagnostic; but Dr. Litzmann has found tenderness on pressure over the kidneys in nearly all cases—this being absent in pregnant females whose kidneys are unaffected. Dropsy, in many cases, is entirely absent; but more frequently it is considerable. It is favoured by an impoverished state of the blood, and by local impediment to the circulation. The true succession and influence of these causes cannot always be determined. Œdema usually commences in the last four months of pregnancy, mostly in the lower limbs, ascending gradually to the knees, or even higher. Sometimes it is limited to these parts; but oftener extends to the abdomen, and more rarely, as in a case recorded by Dr. Litzmann, to the *labia majora*. A most unequivocal sign of renal disease is œdema of the upper part of the body, the hands, arms, and face; but Dr. Litzmann has several times seen this when there has been no albumen in the urine, although there have sometimes been even headache and transient disturbance of vision. The œdema in these parts generally appears towards the end of pregnancy; sometimes only after the patient has been some time in bed, disappearing when she arises. In the lower limbs, the skin is usually pale and cool, and the finger leaves a depression; in the face, the skin is generally warmer than usual, the cheeks red, the eyelids injected, and the skin elastic. The œdema sometimes appears and disappears irregularly; sometimes it increases up to delivery, and then disappears without leaving any trace of renal disease; and that even when the albumen in the urine has gone on increasing.

6. Simpson, Professor J. Y. Albuminuria in Puerperal and Infantile Convulsions, etc.—*Monthly Journal of Medical Science*, October, 1852.

7. Costilhes, Dr. Case of Convulsions occurring seven hours after Delivery.—*Gazette Médicale*, October 9, 1852.

Mechanical Origin of Albuminuria during Pregnancy. In his paper, of which we have given the title, Dr. Cormack ascribes the frequency of albuminuria (and of convulsions) in primiparæ, to the greater tenseness and rigidity of the abdominal parietes; the gravid uterus being therefore more apt, by its inward pressure, to produce renal congestion. The tight girding of the abdomen, often practised by those who become pregnant out of wedlock, probably acts powerfully in producing the same effect; and may, as Dr. Cormack suggests, explain to some extent, why unmarried primiparæ are more liable than married primiparæ to puerperal convulsions. When convulsions occur in subsequent pregnancies, Dr. Cormack would, believing them to be chiefly toxæmic, ascribe them either to imperfect distension of the abdominal wall, from incomplete gestation on former occasions, to excessive muscular development, to renal disease, or to excessive volume of the uterine tumour, including pleural pregnancies. He says that "the gravid uterus, or other tumour, pressing on the renal veins, or in any way seriously impeding the return of blood from the kidneys, must induce more or less inability on their part to perform their emunctory office."

Dr. Litzmann adopts a similar explanation of the occurrence of albuminuria in pregnancy. "In favour of the mechanical explanation of the occurrence of albuminuria in pregnant women, may be adduced its predominance in primiparæ—a fact recognized by all observers. The tight and unyielding abdominal wall most naturally causes the uterus to press more powerfully on the structures behind and above it." Two of his patients who had albuminous urine, were pregnant with twins; in others, there was a large quantity of liquor amnii, or a large child, or both. In one case, there were periodical spasmodic contractions of the abdominal muscles, especially the recti, pressing the uterus against the spine; in four cases the pelvis was narrow.

Dr. Murphy, in his *Lectures on the Principles and Practice of Midwifery*, objects to Dr. Cormack's explanation—"First, that the pressure exercised by the gravid uterus is of too gradual a nature to cause any great amount of congestion, and the circulation has sufficient time to find new channels for itself, and relieve the emulgent veins. Secondly, the period of the attack would be more frequently at the last month of gestation, or the commencement of labour, than we know it to be." (pp. 379–80.) With deference to so high an authority in matters obstetrical as Dr. Murphy, we do not feel convinced by his arguments. In the first place, the number of cases in which albuminuria has been detected during pregnancy, proves that there must be some impediment to the renal circulation; and we must probably take into consideration not only the unyielding abdominal walls, but also the hindrance to the compensatory circulation through the mammary and epigastric veins, produced by tight stays and other articles of female apparel. Secondly, we find Dr. Murphy himself stating (p. 368)—and this is in accordance with general experience—that the most frequent period of puerperal convulsions is "on the approach, or during the progress, of labour."

Relation of Albuminuria during Pregnancy to Renal Disease. In his paper already quoted, Dr. Cormack, after referring to the frequent abrupt occurrence of convulsions and death in the course of Bright's disease, writes as follows: "It is quite plain that a pregnant woman, labouring under Bright's disease, even in an early stage, must in this way run a tenfold risk of convulsions. If she have an ovarian tumour, or any other mechanical predisposing cause to renal congestion, besides the gravid uterus, her risk will also be great. In her, too, delivery will hardly bring exemption from the danger of toxæmia from renal non-elimination. Dr. Simpson said, in 1843, that he had been accustomed to teach in his lectures that 'patients attacked with puerperal convulsions had almost always albuminous urine, *and hence probably granular renal disease.*' This remark of Dr. Simpson's, with deference to so high an authority, I must dissent from. Under proper management, the majority of those affected with puerperal convulsions quickly and perfectly recover, and in future pregnancies are very rarely affected. Undoubtedly, women who have structural disease of the kidneys, are pre-eminently liable to renal congestion, and consequent toxæmia; but then œdema, albuminuria, and convulsions, are not, in the

puerperal woman, pathognomonic of any organic disease of the kidney, though in the *fatal* cases we may expect them to be often present. In three fatal cases of puerperal convulsions, Dr. Simpson found, on dissection, a great amount of renal disorganization. Albumen was looked for in the urine during life, but was not found."

In the *Monthly Journal of Medical Science*, for October, 1852, Dr. Simpson expresses a greatly modified, and we think more correct opinion, on the subject. He says: "Usually, the state of albuminuria which leads to puerperal convulsions is a transitory morbid condition, from which the patient recovers within the course of a few days after delivery; *and the affection does not depend on, or result in, any actual change of structure in the kidney.*"

Professor Litzmann, in the *Deutsche Klinik* for July 17, says: "The anatomical changes which are found in the kidneys of those pregnant females who have died with Bright's disease, denote, for the most part, only the earlier stages. Even Devilliers and Regnault have not felt themselves justified in assuming the existence of albuminous nephritis in all cases. They generally found the kidneys enlarged in volume; the capsule was rarely adherent. In two cases only was there an undoubted granular appearance in the organ. In three cases, inconsiderable enlargement of the organ was accompanied by slight hypertrophy and paleness of the cortical layer. In two other cases, the cortical substance was highly coloured, while the pyramidal portion was in some parts injected, in others pale. In one case, the deep red of the hypertrophied left kidney contrasted strongly with the paleness of the right; and in another, the hyperæmia and swelling were limited to the cortical substance. Cazeaux and Rayer have observed generally the second, sometimes the third, and in one case the fourth form of the albuminous nephritis of the latter author. In all the cases examined by Frerichs, he found fibrinous casts in the urinary passages and in the urine. In one of the cases described by me, the changes in the kidneys had proceeded unusually far; and this might have been inferred from the severity of the symptoms during life, and the presence of tube-casts in the urine."

Dr. Litzmann believes that there is no case in which renal disease, continuing after delivery, has been proved to have commenced during pregnancy; although women have died of chronic disease of the kidneys some time after labour. It is, perhaps, probable that in certain rare cases the renal affection during pregnancy becomes so intense and extensive, that the impeded circulation is not restored after delivery; on the other hand, there is no doubt that women who have once suffered from renal congestion when pregnant, are liable to its return when again in a similar condition. It by no means follows that the disease should amount to uræmia, for this is not always present even in primiparæ.

There is, we think, ample evidence to prove that albuminuria during pregnancy is far from being an indication of *permanent structural renal disease;* but if disease of the kidney already exist, the danger to the patient will be much increased, while delivery will not cause the albumen to disappear from the urine. Dr. Murphy inclines to the belief that "the albuminous state of the urine, taken in connection with the œdematous condition of the surface, would indicate the existence of renal disease in many instances." Temporary congestion is no doubt disease, in the strict sense of the term; but if Dr. Murphy means permanent structural disease, we think that the statistics of Blot and Litzmann, as to the frequency of albuminuria during pregnancy, as well as the common fact of recovery from it, militate against his opinion.

Prognosis. The prognosis in cases of albuminuria during pregnancy, is, according to Dr. Litzmann, more favourable than when the affection occurs under other circumstances. The danger principally arises from poisoning of the blood with urea; but not unfrequently the renal affection runs its course without any threatening symptoms, so that it might be overlooked, unless the urine were examined chemically and microscopically. The albumen commonly disappears after delivery; often within forty-eight hours. During labour, the secretion of urine commonly increases, as does also the number of fibrinous tube-casts; after delivery, these increase for a time, but soon disappear, even

while albumen is still present. The œdema disappears, as the quantity of urine increases.

Relation of Albuminuria to Puerperal Convulsions. The frequent occurrence of albuminuria in connection with puerperal convulsions, has been fully demonstrated by the observations of Drs. Simpson, Lever, and others. MM. Devilliers and Regnault declare that "chez *toutez* les femmes éclamptiques, on trouve de l'albumine dans les urines. Cette règle ne nous a pas encore paru souffrir d'exceptions." Reasoning on these and similar statements, Dr. Cormack says: "If it be a fact, then, that albuminous urine and anasarca—the characteristic signs of congestive kidney—be so common in puerperal convulsions, as to be regarded, by the first and most recent authorities, as their constant concomitants, it may, I think, be very safely inferred that the renal congestion is the cause of the convulsions; or, to be more explicative and precise, that the convulsions are direct toxicological effects on the nervous centres, produced by poisonous substances which the unembarrassed kidney could throw off with the urine, but which the congested kidney cannot excrete." And he refers the greater frequency of convulsions in primiparæ to their greater liability to congestion of the kidney, from the mechanical causes already described.

Dr. Litzmann writes as follows: "The principal danger in Bright's disease occurring in pregnant females arises from the uræmia, which is usually indicated by convulsions. Of the causal connection between Bright's disease in pregnancy, and convulsions, no one, who will observe it, can remain in doubt; although I by no means deny that exceptional cases of eclampsia may arise from other causes. Lever has observed a case depending on inflammation of the meninges. The first authors who pointed out the occurrence of albuminuria in puerperal convulsions, as Lever, etc., recognized the analogy of the convulsions to the cerebral disturbances occurring in common cases of Bright's disease; and expressed their conviction that they were dependent on the noxious influence of blood poisoned with urea. But they, as well as Devilliers and Regnault, failed in discovering urea in the blood of convulsive patients.[1] Frerichs, from his observations on patients and experiments on animals, has asserted that the symptoms of uræmic intoxication in Bright's disease do not depend on the existence of urea, as such, in the blood, but on its transformation within the vessels into carbonate of ammonia, under the influence of a peculiar ferment. My observations on the convulsions of pregnant females entirely agree with this theory. In one of my cases, the presence of ammonia in the blood was not ascertained by conclusive evidence; but in three other cases there could be no doubt of its presence, as carefully repeated experiments always gave the same result. On the other hand, when there were no symptoms of uræmic intoxication, though albuminuria existed, the blood appeared free from this poisonous admixture. I have not found urea either in the blood, nor in the serum resulting from scarification of the œdematous parts. In only one case could I detect ammonia in the expired air. In one case just after delivery, the sweat on the forehead had an alkaline reaction."

Although puerperal convulsions are often connected with renal congestion, it by no means follows that they are an inevitable result. Devilliers and Regnault observed eleven cases of convulsions in twenty pregnant females who had albuminuria; Blot found them present in only seven cases out of forty-one. Dr. Litzmann found seven cases with uræmic symptoms, five of whom had convulsions, in thirteen cases described by him.

Other Effects of Toxæmia from Renal Congestion during Pregnancy. Dr. Litzmann observes that certain other phenomena, principally connected with the nervous system, which have been usually considered as premonitory of convulsions, may be themselves the only effects of toxæmia; and that this probably occurs when the quantity of urea in the blood is but small. Headache is generally present when there is œdema of the face; and is then probably most frequently the result of simple congestion. The most marked symptoms of uræ-

[1] In Guy's Hospital Reports, 1849, vol. vi. chap. 12, Dr. Lever appears to have found urea in the blood of an eclamptic female.

mia are disturbances of the senses, especially of vision. The patients complain of muscæ volitantes, or see objects coloured yellow or red; more frequently they see dark figures, or only see the half of objects; sometimes there seems to be a dark veil over objects; or the patients may be quite amaurotic. These symptoms are sometimes only momentary; in other cases, when they are more intense, they continue for hours, and days. In the amaurosis, the pupils are little or not at all dilated; but they obey sluggishly, or are unaffected by, the stimulus of light. Amaurosis usually appears before or during labour; but sometimes subsequently. Coma or convulsions are apt to follow it. It is probable that most of the cases of amblyopia and amaurosis, which occur at the end of pregnancy, disappear after labour, and return in subsequent pregnancies, are to be referred to this head.

Noises in the ears, which authors have named among the forerunners of eclampsia, have never been observed by Dr. Litzmann.

Nausea, a sense of choking, and vomiting, are among the most constant symptoms. The vomiting is not always an indication of uræmia, but is sympathetic with renal irritation, or perhaps more frequently with congestion of the brain. Its connection with uræmia must be decided by chemical examination of the vomited matters.

When uræmia is developed for the first time during labour, there is often a dulness of the intellect, a certain wildness or melancholy of the patient, and remarkable restlessness and impatience during the labour-pains: there frequently are rigors, returning with each pain (Hamilton, McClintock, and Hardy); the pulse is more frequently slow than accelerated.

Eclampsia rarely occurs without any premonitory symptoms; and when it does, it probably arises from a sudden impregnation of the blood with a large quantity of urea.

Dr. Costilhes (*Gazette Médicale*, October 9, 1852), points out that long continued albuminuria, by impoverishing the blood, may give rise to hemorrhage from the uterus or other parts of the body.

Treatment. Dr. Cormack writes as follows: "The prophylaxis of renal puerperal convulsions must evidently embrace an avoidance of too long continuance in the supine position; an easy corset, giving free play to the lungs, and not pressing back the womb; moderate exercise; regularity and sufficiency of the alvine evacuations; and a good state of the skin. Mental excitement must also be avoided, as it might, even with a moderately poisoned state of the blood, be the immediate cause of convulsions." In the treatment, he gives the following as the leading indications:—

1. Remove pressure from the renal vessels, by interdicting the supine posture, and by unloading the bowels; and, when safe, by emptying the uterus.
2. Relieve congestion of kidneys by purging, by cupping in the loins, or by general bleeding.
3. Venesection, if apoplexy be threatened.
4. Calmatives to soothe the excited nervous system.

The first two of these measures have more especial reference to the condition of the kidneys; the last two to the cerebral symptoms.

Dr. Litzmann observes, that the renal congestion cannot be relieved before delivery; but that it may be mitigated, and more unfavourable symptoms averted, by timely measures, especially the removal of all causes which may assist in impeding the circulation through the abdominal vessels. It is thus important to obviate the constipation so common in pregnant women; and in one case, Dr. Litzmann has not only seen all the symptoms recede, but the albumen in the urine diminish. If the renal disease have set in suddenly, and is accompanied with much pain and tenderness, local bleeding is indicated. It is doubtful whether benefit would be derived from diuretics or astringents before labour; but on this point he has had no personal experience.

With regard to the blood-poisoning, when symptoms of an impoverished state of blood occur, a strengthening diet, with iron, cinchona, etc., are indicated.

In the unmistakable symptoms of cerebral congestion, which almost always accompany uræmia, local depletion and cold applications, timely applied, usually give quick relief, and the secretion of the dry skin may be rendered

active by bathing with warm vinegar. Frerichs, acting on his theory of the conversion of urea into carbonate of ammonia within the blood, gives acids, especially the benzoic; and Litzmann has given the benzoic and citric acids, he believes sometimes with favourable results.

If convulsions occur, general bleeding is indicated in strong plethoric individuals. But if the renal disease have lasted some time, and hydræmia is present, this treatment is likely to injure; local depletion must then be employed and repeated as may be required. Large doses of acids must be given, cold wet cloths applied to the forehead, and the extremities bathed with warm vinegar. It is often useful to empty the intestinal canal; but Dr. Litzmann cautions his readers against being led to give large doses of drastics and mercurials; and he acknowledges himself not blameless in this respect, with regard to a case related by him. If all these remedies fail, labour must be induced; and after birth, the state of the kidneys must be carefully watched. Mild diuretics are now likely to be useful; but if albumen continue to be present in the urine, the case is to be regarded as one of chronic Bright's disease.

HYGIENE.

62. *Destruction of Puerperal Miasma in Lying-in Hospitals.* By Dr. Busch.—The means employed by the author consist in heating the room to a high degree with dry air. This is effected by round iron stoves placed in the centre of the room, and connected with the chimney by metal tubes. The heat can be raised to 50–60° R. (about 155° F.). This must be kept up for two days, during which time all furniture and utensils are to remain in the room.

In March, 1851, puerperal fever invaded the Berlin Lying-in Hospital with remarkable severity; nearly all the patients suffered, and the institution was closed for six weeks, during which time there was the most careful ventilation and purification. These means proved insufficient. Upon the reopening of the hospital, all the new patients became attacked by the disease a few days after delivery. Then the author tried the plan here detailed in every room in the house. The effect was surprising; no fresh attack occurred during the whole summer. The same measures were adopted some time afterwards, and with the same success.—*Med. Times and Gaz.* Feb. 19, 1853, from *N. Ztschr. für Gebwitsk.* xxxii. 3.

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63. *Experiments on the Diet of Prisoners.*—The No. of the *Monthly Journal of Medical Science*, for May, 1852, contains an account, by Prof. Christison, of some experiments on the diet of prisoners, which are interesting, both in a practical point of view, and in relation to the physiology of nutrition. The object of the inquiry was to ascertain with every possible accuracy whether the dietary of the regulations of the General Board of Directors of Prisons in Scotland was sufficient and not more than sufficient to maintain the health and condition of the prisoners. The observations were conducted on a larger scale and with greater care than any similar investigation, and the results are, therefore, entitled to confidence.

The following are Dr. Christison's conclusions:—

1. For the average of people whose occupation involves moderate muscular effort and no great exercise, a simple, well-selected sort of food, supplying seventeen ounces of daily real nutriment, of which four ounces are nitrogenous principles, constitutes a sufficient diet for maintaining health, strength, weight, and general condition; but less is not sufficient.

2. The proportion of nitrogenous nutriment in such a diet cannot be very sensibly reduced below four ounces a day without risk of injury.

3. This amount of nutriment, though in general adequate for the average in the supposed circumstances, is not always so.

4. It is probably inadequate for those who have been accustomed to a vigorous

occupation in the open air, and a liberal dietary, even when their employment is changed for one involving no great muscular effort or exercise.

5. It is inadequate for a fair proportion of persons considerably exceeding the average in bulk.

6. It is inadequate for a considerable proportion of growing lads between sixteen and twenty.

7. It is more generally adequate for females than for males.

8. It is rendered occasionally inadequate by other causes not distinctly indicated by the observations in the Scottish prisons, but certainly independent of any increase in habitual muscular exertion.

9. Hence the economical regulation of the diet of bodies of men must always be a matter of great difficulty; and if deviations from the standard dietary be not allowed with a liberal discretion, injury will be apt to ensue. And here it should be added from other observations, that suspicion may be lulled by no very perceptible injury except loss of weight occurring in ordinary seasons; while, nevertheless, manifest injury will arise in periods of epidemic disease.

10. The prison dietary in Scotland has been very successfully adjusted by long experience in most of the prisons, so far as regards the class of prisoners who formed the subject of the preceding observations and experiments, viz., those imprisoned for terms not exceeding two months. But in that dietary treacle water cannot be substituted for milk without a reduction of flesh, the forerunner of probable ill health, unless some compensation be made in other articles of food. It has, in fact, been disallowed by the board since these experiments were made.

11. In adjusting dietaries, and in all practical inquiries into the subject, reliance ought never to be put in practical observation alone; but scientific analysis should be likewise brought into requisition. I could quote numberless errors committed by merely practical men, which could scarcely have escaped notice had they united scientific knowledge to practical skill.

The following table is added for the purpose of showing in one view the nutritive value of the several dietaries referred to above, and their respective influence on the weight of the prisoners subjected to them:—

	Ounces of nutriment.			No. in 100 prisoners whose weight was		Average pounds lost by each.
	Nitrogenous.	Carboniferous.	Total.	Maintained or increased.	Diminished.	
Edinburgh	4.05	12.87	16.92	82.0	18.0	1.5
Glasgow	4.06	12.58	16.64	67.3	32.6	4.0
Aberdeen	3.98	13.03	17.01	68.0	32.0	4.2
Stirling	4.27	13.40	17.67			
Ayr	4.17	13.20	17.37	29.0	71.0	5.0
Dundee	2.73	14.06	16.79	50.0	50.0	5.25
Perth	2.68	14.11	16.79	46.0	54.0	3.3
Paisley	Not fully reported.			56.0	43.5	3.2
Carlisle	2.5	11.17	13.67	13.04	86.96	6.5
Do. hard labour	2.93	12.17	15.10			

64. *On the Effect of Prolonged Horizontal Posture in the Production of the Great Mortality in Foundling Hospitals.*—M. Hervieux observes, that persons visiting the *crèche* of the Paris Foundling Hospital, admire the exquisite cleanliness, free ventilation, and mild temperature of that vast apartment. Still, of about 4000 infants annually admitted, about 3000, *i. e.* 75 per cent. die; and to explain this fearful mortality, the impoverishment of the blood of these victims of debauchery and poverty, their overcrowding, and the insufficiency of their nursing, have been referred to. All these have something to do with the result; but a chief cause of its production, hitherto overlooked, is the too prolonged maintenance of the horizontal posture. Each child is taken up, fed, and

changed four times daily, and again at night, when it cries. Suppose this operation is performed six times on an average, as it only occupies about twenty minutes, the infant is lying on its back for twenty-two out of the twenty-four hours, quite unable at this age to change its position. Motion and exercise are essential to the well-being of the infant, and its proper place is its nurse's bosom, the warmth of which is imparted to it.

The children of the *crèche* die, in fact, of cold and hunger. Owing to the continuance of the horizontal posture, the temperature of the body becomes lowered, the limbs chilled, the circulation languid, and the respiration embarrassed. All the principal functions languish, the skin becomes indurated, and visceral congestions take place. Some of the children perish from sclerema, some from the so-called pneumonias, which are only sanguineous stases, and others from various serous effusions or hemorrhages. The definitive cause of all these disordered conditions is *cold*, not cold engendered by the diminished temperature of the surrounding medium, but cold resulting from their prolonged immovability.

We have also to inquire whether feeding infants four, six, or even eight times a day is sufficient. Books tell us that they should only be suckled at regular intervals, every three or four, or sometimes two hours; but any one practically acquainted with the rearing of young infants, must see the fallacy of this. In fact, they suck some thirty or forty times a day, absorbing, according to the calculations of Guillot and Lamperière, from three to four pints of milk. This suits them admirably; for in the first two or three years they have to acquire one-half the height and weight they will gain during the rest of their lives; and the limiting them to the periods and quantities suitable for older subjects is unphysiological and mischievous. It has been said that this so-called excess of food gives rise to the gastro-enteric affections, so frequently met with at this period of life; but, in fact, such diseases are not met with in private practice, either in the infants of the rich or of the poor, who are often so inordinately suckled, while the body of every child brought from the hospital exhibits more or less intense signs of acute or chronic gastro-enteritis. The practice of bringing up the children by hand has been assigned as a cause of the great mortality; but nothing similar to it is found among the children so brought up in the worst parts of Paris, where they, however, get abundance of milk and good nursing. At present, the eighty-four infants at the *crèche* have only nine nurses and two night nurses to attend to them; while M. Hervieux considers that one woman cannot pay suitable attention to more than two infants.—*B. and F. Medico-Chirurgical Review*, Jan. 1853, from *L'Union Médicale*, 1852, Nos. 139, 140.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

65. *Poisonous Plants of the Isthmus of Panama.* (From the Botany of the Voyage of H. M. S. Herald, under the command of Capt. Kellet, R. N., during the years 1845–51. By Berthold Seeman, naturalist of the expedition.)—"The most dreaded of the poisonous plants are the amancay (*thevetia nervifolia*), cojon del gato (*thevetia nitida*, De Cand.), manzanillo de playa (*hippomane mancinella*, Linn.), floris pondio (*datura sanguinea*), and bala (*glincidia maculata*, Kunth). It is said of the manchineel, that persons have died from sleeping beneath its shade, and that its milky juice raises blisters on the skin which are difficult to heal. The first of these statements must be regarded as fabulous, and the second be received with a degree of modification. Some people will bear the juice upon the surface of the body without being in the least affected by it, while others do experience the utmost pain, the difference seeming to depend entirely upon a man's constitution. Great caution, however, is required in protecting the eyes, for if the least drop enters them, loss of sight and the most acute smarting for several days are the consequence. The smoke arising from the wood produces a similar effect. While surveying on the coast of Darien, a boat's crew of H. M. S. Herald was blinded for some days from

having kindled a fire with the branches of this tree. Whenever the natives are affected by the poison, they at once wash the injured part in salt water. This remedy is most efficacious, and as the manchineel is always confined to the edge of the ocean, of easy application. It has been stated that the Indians of the isthmus dip their arrows in the juice of the manchineel. There are, however, various reasons for doubting this assertion: First, because the poison is, like that of all euphorbiaceæ, extremely volatile, and however virulent when first procured, soon loses its power. Secondly, because its effect, even when fresh, is by no means so strong as to cause the death of human beings, not even producing, as has been stated, the slightest injury on some constitutions. The statement may, therefore, be considered as an inaccuracy, and it may rather be supposed that the Indians, like those of Guiana, obtain their poison from the two species of strychnos common throughout Panama and Darien.

"The fruit of the amancay is also considered very poisonous; but its dangerous qualities have probably been overrated. There is a gentleman in Panama, who, when a boy, ate four of these fruits without experiencing any other effect than mere griping.

"The leaves of the bala, or, as it is also called, madera negra, are used to poison rats. The datura sanguinea appears to have always played, and still continues to play, a prominent part in the superstitions of tropical America. The Indians of Darien, as well as those of Choco, prepare from its seed a decoction, which is given to their children to produce a state of excitement, in which they are supposed to possess the power of discovering gold. In any place where the unhappy patients happen to fall down digging is commenced, and as the soil nearly everywhere abounds with gold dust, an amount of more or less value is obtained. In order to counteract the bad effects of this poison, some sour *chica de maiz*, a beer made of Indian corn, is administered." T. R. B.

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66. *Death of the Duke of Bourbon.*—(For the particulars of this case, and the various opinions concerning it, see *Elements of Medical Jurisprudence*, 10th edit. vol. ii. p. 192.) "The circumstances attending the death of the Duke of Bourbon have not been generally known, owing to the interest Louis Philippe had in preventing, as far as was in his power, their being publicly exposed. There were several Englishmen in the house at the time, and among them a friend of mine, of the most unimpeachable veracity, from whom I received the following statement:—

"The Duke was on the eve of following Charles X. to England, from a feeling of dutiful submission to the head of his family, but by no means concurring with him in his political conduct. On the morning of his death he had quarrelled with his mistress, Madame Feuchieres, and received a black eye, with which he appeared at dinner. In the mean time, it was known that he had sent for his confidential lawyer, who resided about forty miles off, to alter his will, and the lawyer was expected the next day. He had two valets de chambre, one of them greatly in his confidence; the other in the interest of Madame F. He said to his favourite, 'You must sleep to-night in my ante-chamber.' 'No,' said the valet, 'it is Monsieur ———'s turn, and it would create an uproar.' 'Then,' said the Duke, 'they will murder me in the night.' In the morning, he was found dead, hanging to the rod of a curtain, which could not have been done by himself, as he had scarcely the use of his arms. The king had intrigued with Madame F., by means of which he had succeeded in obtaining half the property of the Duke for his family, and to avoid the publication of his correspondence with her he found means to procure her acquittal."—*Notes by Sir Robert Heron, Baronet.* Third edition. London, 1852. (This work is very much of the character of the writings of Wraxall.) T. R. B.

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67. *Legitimacy. Period of Gestation.*—Vice-Chancellor's Court (England), Feb. 18, 1852. *Dyson* v. *Dyson.* Bill filed by infant claiming to be the child of G. W. Dyson, one of the defendants, and as such child to be entitled to certain real and personal estate, subject to his father's life estate therein. It was alleged by all the defendants that, though the plaintiff was born in wedlock, he was not the child of G. W. Dyson. It was proved that G. W. Dyson left his

wife in Madeira, in February, 1849; that she returned to England in August following; and that the plaintiff was born on the 8th of January, 1850.

Hare, for the plaintiff, read evidence of several medical witnesses, deposing to the possibility of the period of gestation being protracted to a period of 330 or even 336 days, and cited a case, where a foreign court had decreed a child born 333 days after access to be legitimate.

W. M. James and Nugent, for defendants, not called on.

The *Vice-Chancellor* referred to the Gardner Peerage case, where a period of non-access considerably shorter than 336 days had been held by the House of Lords to be decisive against the legitimacy of the child, and said he could not make a decree upon the present evidence in favour of the plaintiff. But plaintiff was entitled to an issue. Plaintiff's counsel refusing this, the bill was dismissed.—*Legal Exam. and Journ. of Med. Jurisprudence*, No. 7. T. R. B.

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68. *Chloride of Arsenic*—Notice of, by Dr. Penny and William Wallace.—In evidence of the extreme facility with which arsenious acid yields the chloride when heated with hydrochloric acid, we may mention one or two experiments.

Two tenths of a grain of arsenious acid were heated on a distilling apparatus with 550 grains of hydrochloric acid, specific gravity 1.100; when one-twentieth of the liquid had distilled over, the distillate was tested with sulphuretted hydrogen; a decided precipitate of sulphide of arsenic separated.

In another experiment, one grain of arsenious acid was distilled with 550 grains of the same hydrochloric acid. A piece of copper ribbon placed in the neck of the flask became coated with a crust of metallic arsenic as soon as the liquid began to boil. One-tenth of the liquid was allowed to distil; and on testing one-third of the distillate with sulphuretted hydrogen, the presence of arsenic was clearly indicated. Another third of the distillate was subjected to Reinsch's process, which also gave unequivocal proof of the presence of arsenic. The separation of metallic arsenic in Reinsch's process appears to depend almost entirely on the ready production of chloride of arsenic, which is instantly decomposed on contact with copper.

As the formation and escape of chloride of arsenic appear, therefore, to occur with certainty when arsenious and hydrochloric acids are heated together, it becomes interesting to inquire whether similar results would obtain in presence of organic matters.

Half a grain of arsenious acid was mixed with an ounce of porridge, and an ounce of hydrochloric acid being added, the mixture was distilled. The moment the mixture began to boil, a slip of copper ribbon previously placed in the neck of the flask was coated with metallic arsenic. Nearly an eighth part of the mixture was distilled over, one-half of which gave with sulphuretted hydrogen, the well-known effects of a solution of arsenic.

Again, two tenths of a grain of arsenious acid were mixed with an ounce of porridge, and three-fourths of an ounce of hydrochloric acid, and the mixture distilled as before. Three drachms of the distillate, when tested by Marsh's process, afforded brilliant stains of metallic arsenic. The distillate gave also a yellow precipitate with sulphuretted hydrogen.

Similar experiments were performed with cow's liver and common broth. The results were equally satisfactory.

The foregoing experiments plainly indicate the availability of the chloride of arsenic in medico-legal investigations for the separation of the metal from animal and vegetable matters, and we are induced to think that its production by the direct agency of hydrochloric acid will be found in practice to be more convenient than by distillation with sulphuric acid and common salt, as recommended by Dr. Fyfe. It appears to be peculiarly suitable for the preparation of the liquid to be subjected to Marsh's process. The chief precaution to be observed is to employ the hydrochloric acid in sufficient quantity and of full strength.

Several experiments were likewise made with sulphide of arsenic. It is slowly decomposed by concentrated hydrochloric acid, with the formation of chloride of arsenic; but the distillate is very apt to be contaminated with sul-

phide of arsenic, reproduced by the secondary action of the sulphuretted hydrogen disengaged at the same time. As common orpiment, however, usually contains arsenious acid, the present process seems also applicable to those cases in which this substance may occur.—*London, Edinburgh, and Dublin Philosophical Magazine*, November, 1852. T. R. B.

69. *A Case of Doubtful Paternity.* By W. L. Sutton, M. D., of Georgetown, Kentucky.—A child was brought to Georgetown, in August, 1852, by its reputed father, accompanied by his physician, a gentleman of 45 or 50 years of age, for examination by the physicians of the town. The attending physician believed the colour of the child was occasioned by the foramen ovale remaining open. In proof of this, he alleged that when the child cried he became much darker, decidedly blue, and thought that the imperfect aeration of the blood consequent upon the patent condition of the foramen was sufficient to account for the permanent dark colour of the skin. In this opinion he was in general supported by another medical man who had seen the child when two months old.

Other physicians discredited the opinion that the colour depended upon cyanosis; they agreed that there were appearances about the child of a very suspicious tendency, but declined any opinion as to admixture of blood, without a better acquaintance with the relatives of the husband and wife.

The child is a boy, four months old, with black, straight hair; the fine hair on the forehead black; the forehead rounded; the nose broad, particularly expanded at the alæ; skin dark, yet not darker than purely white children are sometimes seen. Near the extremity of the coccyx, and rather to one side, was a spot, oval in shape, about three-fourths of an inch long, decidedly dark. There is a popular notion that when a child is tainted with African blood, the scrotum and a streak down the back are always dark. Nothing of that kind existed.

The moral testimony in the case was that, up to the birth of the child, the mother had been entirely above suspicion. In fact, she had been considered a very modest woman. She was said to have fair complexion, light hair, and blue eyes. The husband, who accompanied the child, had nothing remarkable as to complexion, hair of the ordinary brownish colour. His mother was reported to be very dark, with black hair.

Subsequently, it was reported that the woman acknowledged that she had had occasional connection with two negro men in the neighbourhood.

Such are the facts as given by Dr. Sutton. We add some of his comments, which are worthy of note, from his residence among a slave population.

"In this town there is a family—the father half white, the mother three-fourths—whose children vary very much in colour. Some are pretty good samples of the negro race, and others, at five or six years old, are not only as white as most white children, but having straight and light-coloured hair. In stating this, I have gone upon the presumption that the facts are really as they appear. Some of the children *may* be by fathers purely white, and others by those wholly black. I can only say that no suspicion attaches."

To a statement made by the writer, that, "at birth, the new-born black infant cannot be always distinguished from the white—its hair has not yet its peculiar make, and we can only notice the tendency to dark on some parts of the body; in a few days, however, the change commences on the countenance, and gradually extends over the body"—Dr. Sutton objects as follows: "This is rather too positive. In many cases, a child of purely black parents is so white at birth as to exhibit no *tendency to dark* on any part of the body, and, like other changes, this sometimes takes place much more slowly than in others."

"The spots spoken of above are certainly rare, nor do I know to how much consideration they are entitled. There was one on the child which gives rise to these remarks. On the other hand, without being able at this time to refer to any particular case, I am certainly under the impression that I have seen persons, entirely free from suspicion of admixture, who had a dark spot on some part of the body. I sometime since owned a negress, who clearly had no

white blood in her, yet she had a large spot on the forehead and temples greatly darker than her skin in other parts.

The hair, although a very important feature, is not conclusive in determining our judgment. It does not necessarily begin to assume its distinctive character in a few days, as we might infer from the expression of Beck. In half-breeds, generally, it is only curly, and not knappy, as in the negro; frequently, it is more curly than occurs occasionally in persons purely white; whilst again it is as knappy as in the negro.—*Western Journ. Med. and Surg.* Oct. 1852. T. R. B.

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70. *Poisoning by Mushrooms.*—Dr. Goudot has published, in the *Union Médicale*, the cases of seven persons poisoned by them, and of whom three died. The mushrooms were fried in butter and eaten at supper, by a family of parents, children, and a domestic. The quantity consumed by each was very much alike. The night passed quietly; but in the morning the grandfather was seized with vomiting and purging, from which, however, he recovered rapidly. The father, aged 38 years, was similarly affected from morning till evening; but also recovered. On the contrary, the mother and two of the daughters were not seized until twenty hours after eating the mushrooms, and all of them died after sixteen hours of suffering. Lastly, a female servant, aged 13 years, was not attacked until at the expiration of twenty-nine hours after the supper, and then, after vomiting, purging, and cramps, recovered rapidly.

The mother was the only person examined after death. There was a decomposition of the tissues, and the abdominal viscera were softened, and the odour from them was extremely fetid.

What is, however, most remarkable, is that a seventh person, aged 16 years, ate, the next day, mushrooms, at least half in quantity of those that had served the family the day previous. These, however, had lain in water for an hour, and were then drained and pressed. In this condition they were fried with butter and eaten. Diarrhœa followed for several hours, without any other dangerous effect.

Conclusion.—The above cases seem to verify the opinion of Dr. Pouchet, of Rouen, that, if mushrooms be for some time boiled in water, their poisonous principle will be destroyed or extracted.—*Journal de Médecine et Chirurgie*, November, 1852. T. R. B.

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71. *Tincture of Nut-Galls an Antidote to Poisonous Vegetable Alkaloids.*—Caventou, in a letter to Bouchardat, insists greatly on the value of this substance. The tannic acid contained in it causes the precipitation of the alkaloid.

He at the same time discourages the use of the solution of the iodide of potash, which has been recommended by some.—*Gazette des Hôpitaux*, December, 23, 1852. T. R. B.

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72. *Death from the Vapour of Muriatic Acid.*—The Brussels *Herald* says: "M. Pontin, a Swede, whose literary patent was well known, and who was deputy master of ceremonies at the Swedish court, has just died in a most extraordinary manner. He was returning to Sweden, after a voyage he had taken on the Continent. On board of the vessel in which he was a passenger, some carboys of muriatic acid were placed on the deck just above his cabin; during a very stormy night, two of these bottles broke one against the other, the acid running through the cracks of the deck into his cabin; the gas which was contained in it immediately produced convulsions, and he died after one day's dreadful agony."—*Athenæum*, Oct. 30, 1852. T. R. B.

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73. *Religious Insanity.*—A student in theology, at the university of Bonn, in a fit of this, went to a neighbouring wood with hammer and nails, and finding a tree in the form of a cross crucified himself upon it. He was discovered by some peasants, who cut down the tree and carried him with it to Bonn, where he was taken into the hospital, and is now declared out of danger. Several such cases are recorded in *Winslow's Anatomy of Suicide.*—*Med. Times and Gaz.* Aug. 28, 1852. T. R. B.

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

Case of a Female, the mother of seven children, who had never menstruated. By S. T. GREGORY, M. D. With Remarks by C. D. MEIGS, M. D., Professor of Midwifery in Jefferson Medical College, Philadelphia.

To ISAAC HAYS, M. D.,
Editor of the Am. Journ. Med. Sci., March 20, 1853.

SIR: I lately received a letter from Dr. Gregory, of Warrenton, Missouri, which appears to me so interesting as to merit a place in your Journal. It does not seem necessary to publish the whole of the communication, with which Dr. Gregory has favoured me. I therefore beg to offer for your press the following extracts:—

Warrenton, Missouri, Jan. 18, 1853.

PROF. CHARLES D. MEIGS, M. D.,

DEAR SIR: *Quere.*—"Is a woman who never menstruated capable of conceiving and bearing children?" This is a question that has oftentimes presented itself to my mind; and, from all the information I possessed on the physiology of menstruation, I unhesitatingly decided in the negative. And, I will farther state that, for fear my opinions upon the subject were incorrect, or too hastily arrived at, I spared no pains nor labour to consult the highest and most reliable authorities (both French, English, and American), but could find but little, however, in favour of the proposition; and nothing in the main, satisfactory or conclusive. It was my good fortune (if I may be allowed the expression) in the summer of 1846, to meet with a case just in point. I was consulted by Mr. ——, on account of his wife, who he informed me, had been complaining for some weeks of the following symptoms: costiveness, headache, sleeplessness, eructations, &c., &c. Thinking that the symptoms as described, were the results of indigestion, I prescribed a few pills of extract. colocynth. comp. with extract. hyos., and an antacid and tonic, to be taken *pro re natâ*. After recommending the above treatment, I accidentally asked him the further question, "if his wife was regular in her monthly courses?" and to this he gave me the following reply: "In that respect, Doctor, my wife is very curious. From all I can learn, she is not as other women. She has never been in that state since we were married, and she assures me that she never was so before marrying." He stated that she was the mother of six living children (all boys), and that she was then far advanced in pregnancy. As I had attended her in several previous labours, he also requested me to attend her again. To this I readily consented, and in due time, I was called upon. Thinking that he had probably been deceived in relation to the condition of his wife, I thought this would be a most auspicious opportunity to learn the facts from the lady herself. She was safely delivered of a well-formed male child, without an untoward symptom. So soon as delicacy and a sense of prudence would admit, I related to her the conversation I had had with her husband some months previous, and she assured me that all he had said on that matter was true to the word.

She stated that she had never in her life been unwell, like other women.

She had never experienced the usual symptoms preceding or attending menstruation. She had never been troubled with any vicarious discharge, except twice, when she threw up some dark grumous blood. Her general health had usually been good—so much so, that she had been able, most of the time, to attend to domestic affairs without much assistance. Now, this was certainly a novel case to me, and one that I felt much interest in. It also satisfied me that, while it is almost as natural for a woman to menstruate as it is for her to breathe, yet now and then cases do appear, where women who have never menstruated may conceive and bear children. These cases may certainly be considered anomalous.

In conclusion, let me ask you again, to pardon me for thus intruding upon your time and patience with this uninteresting letter; and, with considerations of the greatest regard, believe me yours, very respectfully,

S. T. GREGORY.

After reading the above extract from Dr. Gregory's letter, it appears to me necessary only to make the reflection that as fecundation without a previous act of ovulation, is not to be deemed possible, this lady was the subject of the germ-producing act as fully as any other woman can be—and that, as the menstrual discharge is nothing more than a simple physiological effusion of blood, determined by the processes of ovulation, it is for many women indifferent whether the sanguineous discharge does or not coincide with the oviposit.

Probably, menstruation consists, more essentially in the periodical oviposition, than in the bleeding from the womb that attests the progress of that important office. In Dr. Gregory's patient, no visible signs of menstrual hyperæmia have ever presented themselves, save only those we observe as to the conceptions and gestations, which are the most characteristic of them all.

In this case, we have no greater reason for surprise at the absence of the catamenia, than we have in the instances, very numerous, of women who never *see* after the first conception, until, after numerous lyings-in, they cease to bear children, whereupon they prove to be exactly regular, as it is called. But, such women were always exactly regular in the oviposition—though they never exhibited any *show* of it until they ceased to conceive.

Upon the whole, Dr. Gregory's case is well worthy of perusal. But let the reader beware not to found upon these interesting facts a decision as to the question, whether a non-menstruating young woman is marriageable or not. I have met with too many instances of total absence of the uterus in married women, not to feel how necessary it is, in all such doubtful questions, to have the facts of the case clearly understood, before a professional sanction is given to a union that cannot but produce unhappiness, where abnormal development by default, renders the marriage hopelessly sterile, and the rite impossible.

I am sir, with great respect, &c., &c.,

C. D. MEIGS.

Ventral Pregnancy—Sudden Death. By SAMUEL A. PETERS, M. D., of Boone County, Missouri. (Communicated in a letter to Professor H. L. Hodge, M. D.)

DEAR SIR: On the 17th of December last, I was summoned to see a coloured woman belonging to a Mr. H——, in this county, who was taken very suddenly ill; not being at home at the time, I did not see this patient until an hour and a half after she had been taken ill.

History.—This woman, æt. thirty-five, enjoyed formerly tolerably good health; has had seven children, and was supposed to be pregnant at this time; this, however, had not been satisfactorily ascertained to be so. She, however,

stated that three months anterior to her present illness her menses had not appeared, but since that time, they twice recurred at irregular intervals. The owner of this negro woman informed me, upon my arrival, that she had been washing the floor of a room, not having complained of being unwell, when instantly she fell insensible upon the floor. She was laid upon a bed, and they supposed her complaint to be nothing more than a "fainting spell," which they said she had had several times before. Her pulse 96, was barely perceptible; tongue natural; lips pallid; extremities extremely cold; she referred "her misery" to the hypogastrium. I pressed my fingers upon that part of the abdomen, but it neither lessened nor increased "her misery." I examined per vaginam, but could discover nothing there that would throw any light upon the nature of the case. The lips of the os uteri were thick and soft, and I could very easily introduce one of my fingers in.

From not being able to satisfy myself positively, from the imperfect history I could obtain, as to the true nature of the case, I was necessitated to prescribe for symptoms. The patient died two hours after taking ill.

Post-mortem Examination.—The cavity of the abdomen was filled with a large quantity of fluid blood; I removed fifteen pints of it before I could advance further with the examination. An embryo, with all its membranes, was partly adhering to the upper anterior part of the bladder; the decidua, the chorion, placenta, and amnion, were all distinctly seen. The embryo is three inches in length; all the external members of the embryo are perfectly formed; it had one coil of the funis around its neck. I removed the uterus and its appendages from the body. The uterus was twice its natural size, and three-fourths of an inch in thickness; the inner surface presented no appearance of a decidua; the glandulæ Nabothi were slightly enlarged.

The Fallopian tubes presented nothing unnatural, external or internal; the orifices presented the appearances at the angles of the uterus which they usually do in the unimpregnated state. The right ovarium was much larger than the left, and, when opened, I observed that it was filled with a brown-coloured fluid.

Remarks.—Judging from the size of the embryo, and also from what the patient said respecting her menses, I should suppose that she had been pregnant at least three months.

The cause of this sudden death is obvious; the adhesion of the membranes of the ovum to the bladder becoming ruptured or broken, and the blood-vessels of the bladder being consequently opened, and not having the power to contract, permitted the blood to flow from them until death ensued.

I was very sorry, at the time, that it was impossible to have a competent witness present at this *post-mortem* examination, as the fact presented itself that there was no deciduous membrane, nor any other matter lining the cavity of the uterus. I am well aware that the major part of writers on embryology tell us that the membrana decidua is formed in the uterus before the ovum arrives there, or is commencing to be formed at the time the human ovum is impregnated in the Graafian vesicle, but this membrane I was not able, certainly, to discover in this case of ventral pregnancy.

Boone County, Mo., *February* 25, 1847.

Case of Protracted Fœtation. By H. Y. Hortze, M. D. (Communicated in a letter to Professor C. D. Meigs.)

Dear Sir: I have been induced to give you an epitome of a very singular and interesting case of protracted fœtation which occurred in the county of

my residence (Anson County, N. C.), sometime since; offering as my apology for so doing, the singularity of the case, the perplexity it gave to the minds of the medical gentlemen of the county, as well as to those to whom the case was mentioned, and my own, and being very anxious to hear your opinion in regard to it. I have never heard of, or seen mentioned by any authors I have consulted, a similar case.

The facts are these: Some time, I think, in March, 1843, Rhoda, an intelligent servant, the mother of several children, belonging to Mr. Thomas Robinson (a gentleman of unquestionable veracity and respectability), became pregnant, and went through the different stages without anything very remarkable. The time arrived when she thought she ought to be delivered, and passed so long that it produced some uneasiness in the mind of her master, and he called in his family physician, Dr. Wm. P. Jennings (a well-read practitioner); but, there not being any labour-pains, or any external signs indicative of approaching labour, he supposed her to be premature, and left her.

She continued in this condition for several months longer; Dr. Jennings was again called, and pronounced it a case of hydatids. In the course of a short time her "*monthly periods*" returned with considerable regularity, as to time and quantity, and she resumed her ordinary work, and performed it without much interruption, except occasionally a slight indisposition with what she and Mr. R. thought to be colic pains (though abdominal enlargement still continuing), until about the first of March, 1849, when she was severely attacked with abdominal pains and symptoms of peritonitis and diarrhœa. The family physician was again called, and whilst there, she passed by the bowels two fœtal bones—one of the vertebræ, and one of the metacarpal bones. My preceptor (Dr. Walter G. Jones), was then called in consultation, who supposed it to be a case of extra-uterine pregnancy, in which view the attending physician coincided. The peritoneal symptoms were then the most prominent, and the only thing that seemed to indicate interference, which after several days yielded very readily to the usual treatment. The woman got up again and attended her usual work, but was not altogether in as good health as before the attack, but no medical aid was requested until about the middle of March, 1851. My preceptor was again called to see her, and found her labouring under acute peritonitis, and had been for several days previous to his visit, with a general constitutional disturbance and great prostration. He informed her master that palliation was all he might expect; she continued to decline until the 17th of May, 1851, when she died. On the next day a *post-mortem* examination was held by Drs. Jones, Jennings, and Glass, in the presence of Mr. Robinson and several other gentlemen, and myself. I saw taken from *within the uterus* a perfectly formed fœtus, with the exception of the bones mentioned above, which were missing—and, in almost a perfect state of preservation, weighing three and a half pounds, which my preceptor has now in his office. There was found a fistulous opening into the rectum.

She became pregnant the first of March, 1843, and retained within her uterus a perfectly formed fœtus until the 17th of May, 1851, being about eight years, two months, and sixteen days.

Chair for the Cure of Prolapsus Ani and Hemorrhoids. By M. S. Baer, M. D., of Baltimore. (Communicated in a letter to the Editor.) (With a woodcut.)

Dear Sir: Thirteen years ago, I had a child that suffered greatly from prolapsus ani, notwithstanding all the usual remedies used in such cases had

been tried. On one occasion, wanting to return the prolapsed bowels, I was impressed with the idea that, if the muscles and soft parts about the rectum could be supported, it would prevent a recurrence of the prolapsus. I had a chair prepared according to the diagram now sent, and from that time had no return of the prolapsus; since that time I have had no difficulty in similar cases; the board cured *all* such. I have given the plan to some of my medical brethren of this city, and they report equal success. I have used it in hemorrhoids and other affections of the rectum; and found it of great comfort in severe dysentery. I have not written this out in regular form for publication, but send it to you, to use your own discretion in the matter.

If you think proper to give it form and publish it, you have my entire approbation, feeling satisfied that the result of a trial, the same report will be given of its success.

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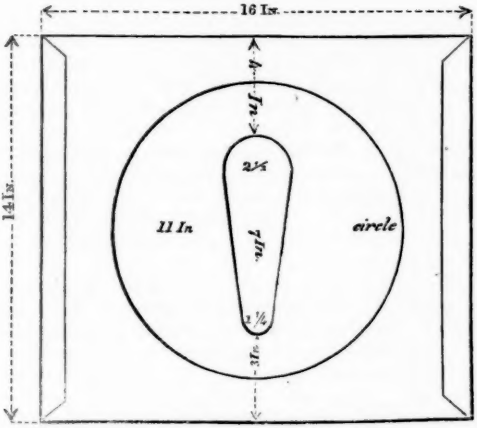

Ground-plan of a Seat for the cure of Piles. Scale $\frac{1}{6}$ to the inch.

BALTIMORE, *Dec.* 8, 1852.

Wills Hospital—Report for the Quarter ending December 31, 1852.—Service of Dr. HAYS.

No. of Patients in the House, October 1st—36.
" " admitted during the quarter—27 males, 21 females—48.
" " discharged " " " 27 " 22 " 49.

RESULTS OF TREATMENT, 30 *cured;* 14 *relieved;* 2 *incurable; and* 3 *no change.*

The following list embraces the ophthalmic cases that have been under treatment:—

Acute conjunctivitis,	4	Choroiditis,	1
Chronic "	19	Amaurosis,	2
Corneitis,	5	Purulent ophthalmia,	4
Ulcers of cornea,	5	Scrofulous "	7
Opacities of "	3	Rheumatic "	4
Iritis,	10	Wound of the eye,	3
Closure of pupil,	3	Tumor of the lids,	1
Cataract "	11		—
Total,			82

New out-door patients—209.

A patient who was admitted on the 9th of October was found to be affected with *Tænia solium.* At the request of Dr. Hays it was determined to try the efficacy of *pumpkin seeds.*

The patient had, for years, been a martyr to the troublesome parasite, notwithstanding various *anthelmintics* which had been administered at different times, among which was the *oil of turpentine;* and this she had taken often, occasionally, however, with temporary benefit.

The experiment was first made with the *dried* pumpkin seeds, and was *unsuccessful.*

A week subsequently, on the evening of the 23*d* of October, ℥ii of the fresh seeds of the common field pumpkin, previously having been rubbed up with sugar and water, were administered at intervals of an hour in four doses. In each case the patient had been *prepared,* by taking a light breakfast and dinner, and fasting in the evening. The next morning at ten o'clock, the patient's bowels not having been moved, ℥i of the seeds, prepared as mentioned before, was given; and in less than half an hour she passed a *tape-worm,* measuring about three yards.

A month after this she left the hospital, without any evidence of a return of the affection. She was heard from the 10*th* of the present month, January, and still remains *entirely well.*

THEOPHILUS PARVIN, M. D.,
Resident Physician of Wills Hospital.

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Spina Bifida. By Geo. H. Patterson, M. D., Resident Physician of the Northern Dispensary.—By invitation of a medical friend, I recently had an opportunity of witnessing the *post-mortem* appearances of this somewhat rare and interesting disease, and, with his permission, have prepared the following account of the case, believing that it may possess some interest to your readers.

The patient was a little boy, who, at the time of his death, was two years of age; he was the first and only child of apparently healthful parents, and, with the exception of this tumour, was free from any other lapsus naturæ. At the time of birth it was about the size of a walnut, but had grown so as to be about four and a half inches in diameter, and of the appearance of a somewhat flattened sphere. The situation was at the junction of the last lumbar vertebra with the sacrum, and when examined by holding a light to one side of the tumour, it was found to be quite translucent. This and the fluctuation seemed to indicate that the walls of the part were of no great thickness. The chief inconvenience that the patient had experienced, arose from an herpetic eruption, which covered the superior portion of the tumour, supposing the child in an upright position; locomotion had been perfect, and the excretions were not passed incontinently. The head of the child was not preternaturally large, although it was remarked that the anterior fontanelle had not closed. The little patient was active, and of a lively disposition, and

had enjoyed an unusual degree of exemption from sickness until the day of his death. He was seized with convulsions at 1 o'clock, P. M., in which state he continued until the fatal termination, which occurred about midnight.

Upon opening the tumour, by means of a stylet, from fʒvj to fʒviij of fluid was discharged, having the appearance of the purest spring-water, being quite free from colour, odour, or unctuous feel. Upon elevating the head and chest, the quantity of fluid was not increased more than about fʒii, or fʒiij. The walls being now exposed by means of an incision, that portion covered with herpes was found to be about one-fourth of an inch in thickness, while the lower portion was at least half an inch; the space between the integument and sack being occupied by adipose tissue. The abnormal opening at the junction of the lumbar vertebra with the sacrum, would admit the middle finger of an adult; through this passed that portion of the spinal marrow which should have continued down the sacral canal, the latter being apparently obliterated; the cord then turned upwards, and was attached to the wall of the sack, about an inch from the junction of the upper part of the tumour, with the back of the subject, and to the left of the median line. The nervous tissue was not softened, but was perhaps not as fully developed as natural. The nerves given off from the spinal marrow (or cauda equina), as it emerged from the spinal canal, continued downwards and forwards through the posterior sacral foramina. The lining membrane of the sack had the usual appearance of serous tissue.

How far this disease was complicated with effusion upon the brain, I am not prepared to say, the examination not having extended thus far. ("It cannot be denied that a primary collection of water in the membrane enveloping the spinal marrow may exist without water in the head. Although the seat of the water be not always the same, it is, however, probable that it most commonly collects between the vascular and arachnoid coats."—*Chelius.*) No dulness of the cerebral faculties had existed till the convulsions; yet, as stated above, the anterior fontanelle was believed to be not closed. The tumour and spinal canal was distended with fluid, and this was sufficient to cause convulsions. The question therefore arises, would not the prompt introduction of the stylet, in such an emergency, be indicated? Observing the same caution as would be necessary in tapping the brain, and as chronic hydrocephalus is usually associated with the disease under consideration, such a course would indeed be tapping the brain. The constitution of the child having been previously good, I am disposed to believe that this operation at such a crisis would be quite justifiable.

It is very well known that the sudden evacuation of the fluid in cases of spina bifida, has produced death; but the case of Mr. Dumville referred to in the *American Journal Med. Sci.* (for Jan. 1847, p. 195), sufficiently proves that such a result is not inevitable. The operation was followed by congestion, twitchings, &c., threatening a convulsion; the case, however, recovered perfectly. Now, as an excessive accumulation of fluid upon the cerebro-spinal axis produces convulsions which is almost necessarily fatal, we cannot but believe that the prospect of an unfavourable termination would be lessened by the operation.

I do not know that there is any uniformity as to the portion of the sack to which the spinal cord is attached in these cases; but, as puncturing has been relied upon by many in the treatment of the disease, it is not only desirable but important to avoid wounding the medulla. The safest part for such an operation in the case I have given, would have been at the most dependent part of the tumour, while the patient was in a standing position.

PHILADELPHIA, *January* 8, 1852.

Tracheotomy—Foreign Substance in the Trachea. By B. F. TRABUE, M. D., of Glasgow, Ky.—On Tuesday evening, April 13, 1852, W. M. B., a boy about five years of age, while romping in the yard with a dog, having some grains of corn in his mouth, let one slip into the trachea. Urgent dyspnœa ensued, with spasmodic coughing, which continued, frequently threatening suffocation, until I saw the child, five days after the accident.

I found the parents in deep distress, though little "Willie," at the moment, was breathing quite naturally and looking well. Upon applying my ear to the chest, I found that very little if any air entered the right lung. After satisfying myself fully of the presence of the corn, I determined to operate, though the mother very reluctantly consented for me to do so, and the boy proved quite refractory. By force, I laid the little patient upon the table, and obliged him to inhale chloroform until he was entirely under its influence; then proceeded (assisted by Mr. J. McNally, and Dr. Thos. Hord) to make an incision about an inch and a half in length through the skin and subcutaneous cellular tissue.

With the handle of my knife and finger-nail I pushed aside the sterno-hyoid and thyroid muscles, and, by careful dissection, exposed about an inch of the trachea immediately above the sternum. I then paused a short time, that the blood might cease to ooze out, and that the influence of the chloroform might pass off. Both objects having been accomplished, in a great degree, I introduced a long slender blade into the trachea, which immediately brought on a violent fit of coughing, by which the trachea was retracted and the blade thrown out when I had only divided a single ring (which might have been avoided, had I taken the precaution to steady the trachea with a tenaculum). However, amidst the struggles, cries, and coughs of my little patient, I again introduced the knife and divided three more rings, which was followed by more violent coughing than any that had preceded, the air passing mostly through the artificial opening. I turned the patient's face downwards, elevated the lower extremities, at the same time striking his back opposite the bifurcation of the trachea, hoping by these means to extrude the corn—but without success. The mother soon after came in, took possession of the patient, and would not consent for any further efforts to be used.

On Monday, twenty-four hours after the operation, found patient quiet (the wound still open), with an accelerated pulse; ordered a dose of oil and left, still not being able to get the mother's consent to use other means. The child breathed quietly through the opening with but little disposition to cough until Wednesday night, three days after the operation, when the wound in the trachea closed.

Thursday night, four days after the operation, and one after the closure of the wound in the trachea, a violent fit of coughing came on, which lasted about an hour, threatening every moment death from spasm of the glottis; after which he slept quietly for four hours, and arose as usual.

From that time until the 10th of May (twenty days after the operation), spells of coughing occurred at intervals of from three to five hours.

At 7 o'clock P. M., 10th of May, the child commenced coughing violently, which continued until 10 o'clock; when, exhausted, he fell into a sleep; but, after a few hours, he awoke and coughed incessantly with great difficulty until about noon, 11th of May, when the grain of corn was forced into the mouth and swallowed, very much to his own relief and the comfort of his friends. He has had no unpleasant symptoms since.

GLASGOW, KY., *November* 2, 1852.

Scirrhosis of the Liver. Reported by JAMES CROOK, M.D., of Dayton, Ohio.—Mrs. H. W. died on the 27th of March, 1852, aged 43 years, and a *post-mortem* examination was made by Drs. O. Crook, Wm. Egory, and myself. She was of the bilious sanguine temperament, habits regular and temperate. She had laboured under disease for three years, but had been confined to her bed only four months of this time. Her liver was enormously enlarged, and extended from the sixth rib to the symphysis pubis, reaching entirely from one side of the body to the other, completely covering and displacing the organs within the cavity of the abdomen. There were large excrescences on the surface of the whole liver, varying from the size of a pigeon's-egg to that of a hen's-egg. The whole organ was one irregular and shapeless mass of scirrhus, with the exception of about the one two-hundredth part, which was immediately around the gall-bladder. The vessels were entirely obliterated. The weight of the organ was twenty-four and three-quarter pounds. One large mass of cancerous growth of an oval shape was found lying in the transverse fissure of the liver, entirely separated from all the structures around. This, probably, was the result of a cancer-cell, which having become detached, grew by its own inherent vitality. There was a mass of cancer attached to the posterior and inferior portion of the uterus. The gall-bladder was full of bile and biliary concretions. The liver seemed to have continued to fulfil its functions until within three days before her death, since she did not become jaundiced until that time, after which her skin became perfectly yellow. The serum which was effused within the cavity of the abdomen was tinged with bile. The liver was adherent to the diaphragm, the stomach, the ribs in front, and the duodenum behind. The omentum and pancreas were much atrophied; the omentum had wasted away to mere shreds, and the pancreas could only be recognized by its location. The spleen was considerably enlarged and studded all over its surface and through its substance with tubercles, which is a singular fact.

The lungs were healthy, but light in colour and in weight. The pain experienced was never very severe until after the liver had increased to such an extent as to press upon the sacral plexus of nerves, when there was great pain in the nates and posterior part of the thigh. All the fibres of the abdominal muscles were completely absorbed in many places where the prominent portions of the liver pressed upon the anterior walls, until nothing remained but the integuments, which were beginning to slough away. The whole body was much emaciated.

DAYTON, OHIO, *April* 10, 1852.

Case of Dipsosis Avens. By F. L. KEYES, M.D., of Jerseyville, C. W.—P—— C——, a labourer, called at my office on the 22d of January, 1851, complaining of excessive thirst, which had increased very much within three months past. He stated that he was obliged to drink frequently during the day, also to have a pail of water at his bedside during the night, which he usually drank up before morning, without the least abatement of his thirst. In other respects he enjoyed perfect health. He had suffered from this morbid action more or less for ten years, but not so severely as at present. He attributed his complaint to having eaten a quantity of green garden beans when a lad of about ten years of age. He also stated that he had taken various medicines to no effect.

After reflecting on the case, we came to the conclusion that the complaint depended upon, or was kept up by, a peculiar action of the stomach, perhaps not unlike gastrodynia. From the favourable results obtained by the use of

pot. iodo-hydrarg. in the latter disease, we thought proper to depart from the common course of treatment, and try its medical powers in this disease, since other remedies which had been used had signally failed; accordingly, we directed the following prescription, viz.: ℞. Hydrarg. deuto-iodidi grs. iv; Pot. iodidi ℈j; Aquæ destillat. f℥; M. ft. solutio. *Cujus æger guttus quinque ter in die sumatur* To chew daily pieces of rad. rhei, and swallow the juice. In a few days, the thirst became less urgent; and before the medicine was near all taken the patient considered himself well, and has had no return of the complaint since.

JERSEYVILLE, ⁊. W., *Dec.* 27, 1852.

Transposition of the Stomach and Duodenum. Concealment of the Colon behind the Duodenum. Strangulation of the Colon rapidly fatal, resulting from this congenital malposition. By DAVID PRINCE, M. D., Jacksonville, Ill. —Sarah Hardin, aged six, of rather slender form inherited from both parents, has all her life been subject to colics of a slight character.

During the day (January 30), she complained occasionally of pain in the abdomen, but played with the other children the greater part of the time, and ate her breakfast and dinner as usual. About 5 P. M., she ate a little toast, and lay down. Growing gradually worse, and vomiting, her father called upon Dr. Henry Jones, who prescribed some purgative medicine, only a portion of which was retained.

The paroxysms of pain became more frequent, with tenderness on pressure upon the abdomen. The extremities were cold, and the pulse flagged. At 1·A. M. (31st), Dr. Jones saw her again. No pulse. Injections were given, and sinapisms applied to the abdomen. In Dr. Jones's absence, the friends gave anodynes and carminatives by the mouth. The child slept an hour, and awoke in a paroxysm of pain, followed by vomiting of the contents of the stomach. Some fecal matter had been passed from the rectum early in the night, but afterwards nothing but the injections. At 7 o'clock, when I was called, the countenance was anxious, the breathing thoracic, the skin livid, and in a few minutes she expired, having manifested no mental confusion.

Post mortem, at 3 P. M. Abdomen not tense; omentum absent. Small intestines exhibited full venous congestion, neither distended nor collapsed.

The ascending ramus of the colon was of a chocolate colour and greatly distended, with its cæcal extremity in the left iliac region, and free, the meso-colon allowing it as much freedom of position as any loop of small intestine. About a pint of brown or chocolate serum was removed from the cavity of the peritoneum, and some flocculi of coagulable lymph were seen, but no adhesions. The parietal peritoneum presented everywhere numerous minute points of arterial congestion, in contrast with the dark hue of the intestines. The rectum, and sigmoid flexure, and descending ramus were collapsed and pale, but the transverse colon did not at once appear. *The mystery was now solved.*

The stomach, of its natural hue, and collapsed, was found reversed, the large or cardiac extremity being on the right side under the large lobe of the liver, and the small or pyloric extremity pointing to the left. The head of the pancreas rose from its ordinary confined position to meet the duodenum, which pursued its course to the right, passing *anterior* to the colon, and closely binding it down, and acquiring the usual length of mesentery as it became jejunum. The mesenteric artery, with the accompanying veins and nerves, passed by the side of the duodenum anterior to the colon, causing a permanent encroachment upon the colon for the space of an inch and a half, so that, upon

being released from this congenital confinement, the canal would only admit the passage of the middle finger. The valvular structure characteristic of the colon was here absent, the mucous membrane presenting a smooth surface. Upon relieving this natural stricture, the contents of the ascending ramus passed freely into the hitherto collapsed portion. The line of demarcation between the inflamed and uninflamed parts was as distinct on the cæcal side of this stricture as if a ribbon had been tied around the intestine, and the ascending ramus painted up to this band. No substance was found within the intestine capable of causing the obstruction.

Remarks.—There were only twelve hours of serious sickness, without the severe symptoms which complete strangulation usually produces. Death took place before distinct adhesions had time to form, though the adhesive material had been produced to a slight degree, and before any tumefaction of the peritoneum had occurred. The inflammation was in its stage of congestion verging into the adhesive.

The constricted portion of the intestine was not here inflamed, but presented the same paleness which characterized the collapsed intestine beyond. The inflamed intestine was all on the proximal side of the stricture and greatly distended, though the inflammation had not passed into the softening stage.

The case was beyond the reach of surgery, the stricture being behind the duodenum, and the great vessels going to and from the small intestines.

DOMESTIC SUMMARY.

Yeast in Diabetes.—Prof. Wood stated, at a recent meeting of the Philadelphia College of Physicians (Dec. 1, 1852), that he had a case of diabetes then under treatment in the Pennsylvania Hospital, which, in the results thus far obtained, was not without interest in a therapeutic point of view. He would first present a brief sketch of the case, drawn up by his young friend, Dr. R. A. F. Penrose, one of the resident physicians of the hospital, and would then offer a few remarks.

"Mary Ann Cain, born in Ireland, a domestic, aged thirty, was admitted into the hospital, November 16, 1852, for palpitation of the heart. Upon examination, the heart was found acting with unusual energy and quickness; but the sounds were normal. Her general condition was one of extreme emaciation, her weight eighty-three pounds, the pulse frequent but not strong, the tongue red and smooth. She stated that she suffered much from constant thirst, and had a perpetual desire to eat. Attention was directed to the urine; and it was found that she was passing from 18 to 20 pints daily, of a specific gravity varying from 1036 to 1040. On the addition of yeast, it fermented briskly. Boiled, after the addition of solution of sulphate of copper, and solution of caustic potassa, it yielded a reddish-brown precipitate; boiled with solution of potassa alone, it acquired a dark-brown or bistre tint. The case was clearly one of saccharine diabetes.

"Two days after admission, she was placed upon an animal diet, with non-farinaceous vegetables, and one small biscuit three times a day. Cod-liver oil was also directed, and *a teaspoonful of yeast, three times daily, immediately before meals.*

"22*d*. The quantity of urine now passed in 24 hours was 10 pints, and the specific gravity 1022. The thirst and appetite were much diminished. The same treatment was continued.

"27*th*. The patient complained of total loss of appetite, and could not take her cod-liver oil. The tongue was extremely red and inclined to dryness, and there was pain on pressure in the epigastrium. The quantity and sp. gr. of the urine were as at the last date. The cod-liver oil and animal diet were suspended,

and she was placed upon farinaceous drinks with milk. A pill, composed of one grain of the blue mass and a quarter of a grain of opium, was directed four times a day, and the yeast was continued.

"30*th*. The patient felt much better, her tongue was moister and less red, and the gastric symptoms were much ameliorated. Not finding milk to agree with her, she had lived chiefly on oatmeal gruel, with a soft-boiled egg occasionally. The quantity of urine had now been reduced to 7 pints in twenty-four hours, and its specific gravity to 1020.

"31*st*. The patient continues as yesterday, the urine having amounted, in the last period of twenty-four hours, to only six pints; the specific gravity not examined."

Much light, Dr. Wood observed, had recently been thrown upon the pathology of diabetes. The disease is now admitted to be characterized by sugar in the blood, the kidneys being only secondarily affected. The experiments of McGregor proved that sugar exists in great excess in the stomach of diabetic patients after eating, and it may readily be supposed to pass thence into the circulation. Bernard has shown that the liver, in its normal action, produces sugar out of the portal blood, and that this sugar passes through the vena cava, right side of the heart, and pulmonary arteries into the lungs, where, in the healthy state, it is wholly consumed. Excess in the sugar-producing action of the liver, or deficiency in the sugar-consuming action of the lungs, may be followed by the entrance of saccharine matter into the general circulation, and thus give rise to diabetes. The same physiologist proved that, by irritating a certain point of the medulla oblongata, the liver was made to generate a great excess of sugar, which, escaping decomposition in the lungs, entered the arterial circulation, and passed out with the urine.

We thus perceive that there may be various sources of the saccharine impregnation of the blood. *In the first place*, it may arise from some defect in the gastric digestion, in consequence of which farinaceous and other nutritive substances are converted into glucose or grape-sugar, which remains unchanged; or, *secondly*, from hypertrophy or other disease of the liver causing an overactivity in its sugar-producing function; or, *thirdly*, from disease of the lungs impairing their power of consuming the sugar; or, *fourthly*, from irritation of the nervous centre in the medulla oblongata, which appears to control the action of the liver in relation to this product; or, *lastly*, from two or more of these sources combined.

Now, in the case before us, no organic affection of the liver or of the lungs could be detected, and there was no reason to suspect the medulla oblongata; but the smooth reddened state of the tongue, and the epigastric tenderness seemed to point specially to the stomach as the seat of the disease.

In the number of the *Edinburgh Monthly Journal of Medical Science* for October last, it is stated that Dr. Gray, of Glasgow, had been induced to make trial of *rennet* in a case of diabetes, in the hope that, as this body converts sugar out of the body into lactic acid, it might be found to produce a similar change within the stomach; and the lactic acid thus generated might be eliminated from the system, or rather decomposed by the respiratory process. In the case referred to, the urine was copious, of the specific gravity 1045, and strongly saccharine. A teaspoonful of *rennet* was given three times a day. In eight days, the specific gravity of the urine was reduced to 1025, with but a trace of sugar; in twenty-five days, the quantity was four pints, and the density 1022.5, and no sugar could be detected. At the end of six weeks, the urine remained free from sugar, and the patient had so far improved in health and strength as to return to his work.

It occurred to me, observed Dr. Wood, from the results of this case, that yeast might prove equally beneficial, by causing a decomposition of the sugar in the stomach such as it is well known to occasion out of the body, resulting in the production of acetic acid. Being under the impression that, in the case now reported to the College, the primary disease probably resided in the stomach, and that the diabetic sugar was generated there, I determined to try the effects of this remedy. The patient had been two days in the house before she was placed under treatment, and during this period no change had taken place in

the quantity or character of the urine. It will have been noticed that quickly after the commencement of treatment, a very great change took place in both these respects, the quantity of urine being reduced, in the course of four days, from twenty pints to ten daily, and the specific gravity from 1036 or 1040 to 1022. But the almost exclusive use of animal food may be supposed to have contributed to this result. In consequence, however, of the gastric inflammation, it was necessary to suspend this diet, and to allow the patient to use farinaceous food, the yeast being continued. So far from any increase of urine in consequence of this change of diet, its quantity was still further reduced, so that, upon the last day upon which it was examined, it did not exceed six pints, while the specific gravity was as low as 1020, the quantity having thus been reduced from twenty pints to about double that of health, and the density from 1040 to that of normal urine. There can be no doubt whatever that the sugar has been very greatly diminished; and there is no cause apparent to which the result can be ascribed except the use of yeast.

What may be the further progress of the case cannot, of course, be foreseen. Even should we succeed in preventing altogether the elimination of sugar with the urine, it does not follow that the case will end in recovery. The remedy is addressed only to one of the effects; a very important effect, it must be admitted, and itself capable of producing great mischief, but still by no means the whole disease. Nevertheless, if, by the steady use of a remedy so little disagreeable as yeast, we can prevent the abnormal production of sugar, and the exhausting effects on the system of the excessive secretion of urine occasioned by it, we shall have gained one great point. We shall at least gain time for accurately investigating the source of the evil, and applying such remedies as may offer a reasonable hope of permanent benefit.

At a subsequent meeting of the College (Jan. 5, 1853), Dr. W. stated that there had been since no further improvement in this case. The employment of the yeast had been persevered in, except for a short period during which rennet was substituted without any appreciable effect; but there has been rather a falling back than continued diminution of the symptoms. The patient is better, however, than when first subjected to treatment. The quantity of urine is diminished one-half, and its specific gravity is considerably less.

Dr. Pepper has employed the yeast in a case of diabetes; the effect appeared at first to be strikingly beneficial, but this did not continue for any length of time. Dr. P. has used rennet steeped first in tepid water, and subsequently, with the view to increase its strength, in wine, but has not observed any good effects to result from its employment. He suggested that a trial should be made of pepsin as a remedy in diabetes.—*Quarterly Summary of the Transactions of the College of Physicians of Philadelphia*, Vol. I, N. S., No. 9.

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Fracture of the Processus Dentatus.—[Prof. Willard Parker relates (*New York Journ. Med.* March, 1853) the following very remarkable case of fracture of the processus dentatus, in which the patient continued to follow an active occupation for five months, when death suddenly took place. The case occurred in the practice of Dr. Bigelow:—]

The patient, Mr. G. B. Spencer, was a man forty years of age, a milkman by occupation, of medium height, nervo-sanguine temperament, of active business habits, and capable of great endurance. His life was one of constant excitement, and he was addicted to the free use of liquors. He suffered, however, from no other form of disease than occasional attacks of rheumatism, for which he was accustomed to take remedies of his own prescribing, which were generally mercurials, followed by liberal doses of the iodide of potassium, "to work it all out of the system."

On the 12th of August, 1852, while driving a "fast horse" at the top of his speed on the plank road near Bushwick, L. I., he was thrown violently from his carriage by the wheel striking against the toll-gate. He alighted upon his head and face, about fifteen feet from the carriage. Upon rising to his feet, he declared himself uninjured, but soon after complained of feeling faint; after drinking a glass of brandy, he felt better, got into his carriage with a friend, and drove home to Rivington Street in this city, a distance of more than two

miles. There was so little apparent danger in his case that no physician was called that night. Early on the morning of the following day, Dr. B. was called to visit him. He found his patient reclining in his chair, in a restless state, and learned that he had suffered considerable pain in the back part of his head and neck during the night. He was entirely incapacitated to rotate the head, which led to the suspicion of some injury to the articulations of the upper cervical vertebræ; but so great a degree of swelling existed about the neck as to prevent an efficient examination. There was no paralysis of any portion of the body, his pulse was about 90, and his general system but little disturbed. Warm fomentations were applied to the neck, and a mild cathartic administered. On the following day, there was no particular change in his symptoms, but, as there existed considerable nervous irritability, tinct. hyoscyami was prescribed as an anodyne, and fomentations of hops applied locally. On the third day leeches were applied to the neck, and after this the swelling so much subsided that on the fifth day an irregularity was discovered to exist in the region of the axis and atlas, which had many of the features of a partial luxation of these vertebræ.

At this time he began to walk about the room, having previously remained quiet on account of the pain he suffered on moving. He persisted in helping himself, and almost constantly supported his head with one hand applied to the occiput. He often remarked, if he could be relieved of the pain in his head and neck, he should feel well. He began to relish his food, and the swelling nearly disappeared, at the end of a week, leaving a protuberance just below the base of the occiput, to the left of the central line of the spinal column, with a corresponding indentation. Notwithstanding strict orders to remain quietly at home, on the ninth day after the accident he rode out, and in a day or two after returned as actively as ever to his former occupation of distributing milk throughout the city to his old customers. During the following four months, no material change took place in his symptoms, although he constantly complained of pain in his head. For this period he did not omit a single day his round of duties as a milkman, which occupied him constantly and actively from five o'clock in the morning to nearly noon. On the 1st of November Professor Watts examined him, and inclined to the opinion that there was a luxation of the upper cervical vertebræ.

About the 1st of January, 1853, the pains, from which he had been almost constantly a sufferer, became more severe, and he was heard to complain that he could not live in his present condition; he remarked also that he had heard a snapping in his neck. After going his daily round on the 11th of January, he complained of feeling cold, and afterwards of a numbness in his limbs. In the evening he had a chill, and complained of pain in his bowels. He passed a restless night, and arose on the following morning about six o'clock; he was obliged to have assistance in dressing himself, and experienced a numbness of his left, and afterwards of his right side. He attempted to walk, but could not without help, and it was observed that he dragged his feet. He sat down in a chair and almost instantly expired at eight o'clock A. M. on the 12th of January, precisely five months from the receipt of the injury.

The autopsy was made thirty hours after death, by Dr. C. E. Isaacs, in presence of several medical gentlemen.

Muscular development uncommonly fine; an unusual prominence observed in the region of the axis and atlas. On making an incision from the occiput along the spines of the cervical vertebræ, the parts were found to be very vascular. These vertebræ were removed *en masse*, and a careful examination instituted. The transverse, the odontoid (ligamenta moderatoria), as also all the ligaments of this region, excepting the occipito-axoideum, were in a state of perfect integrity; this latter was partially destroyed. A considerable amount of coagulated blood was found effused between the fractured surfaces, some of it apparently recent, but much of it was thought to have occurred at the time of the accident, and afterwards to have prevented the union of the bones. The spinal cord exhibited no appearances of any lesion. The odontoid process was found completely fractured off, and its lower extremity inclining backwards towards the cord. Death finally took place, doubtless, from the displacement of

the process, during some unfortunate movement of the head, by which pressure was made upon the cord. The destruction of the occipito-axoid ligament, which would otherwise have protected the contents of the spinal cavity, must have favoured this result.

It would at first seem impossible that life could be prolonged, at least for any length of time, in an accident of this nature. And such was the prevailing opinion until recently. If, however, we reflect upon the anatomy of this region, and consider that the only lesion was a fracture of the odontoid process, the contiguous vertebræ remaining nearly in their natural relations, and the ligaments maintaining their integrity, our first impressions will change. As it is the office of this process to steady the head upon the trunk, that function can be equally well performed externally by the hands, as was done in this case, and others to which we shall allude. But yet it is remarkable that a person suffering this accident, should be able, for such a length of time, to follow, actively and unremittingly, a rough occupation, with little or no inconvenience. He was liable to death from the most trivial accident.

[Professor P. refers to a similar case in the practice of Mr. CLINE (*Cooper on Fractures and Dislocations*) and one reported by Mr. PHILLIPS (*Med. Chirurg. Trans.* xx.]

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Ovariotomy terminating Fatally.—[Ovariotomy was performed last summer by Prof. GROSS, and though the termination was unfortunate, the distinguished operator has had the courage to publish it. The following are its details:—]

Miss D., the subject of this case, was twenty-two years of age, rather tall and slender, and of nervo-sanguineous temperament. Her general health had always been pretty good until within a short time of the operation which I am about to describe; she had menstruated regularly since her fifteenth year, and had never suffered materially from derangement of her digestive organs. In the winter of 1848, she first perceived a small tumour in the lower part of her abdomen, free from pain and tenderness, perfectly movable, and inclining somewhat more to the right side than to the left. This continued steadily to increase in size, at first gradually, and afterwards rather rapidly, until the following autumn, when it was so large as to cause serious inconvenience by its weight and bulk, as well as by its pressure upon the diaphragm and abdominal viscera. I saw Miss D. for the first time on the 11th of May, 1849, along with Dr. Knight and Professor Miller. Her general health was still good, although she was considerably emaciated; but the abdomen was greatly distended by a tumour, which, upon examination, was found to be partly fluid and partly solid, smooth and uniform upon the surface, and entirely devoid of pain and tenderness. The uterus appeared to be perfectly sound; even the menstrual function had never been seriously deranged. But little was done in the way of constitutional treatment. On the 5th of June, with the concurrence of Dr. Knight and Dr. Miller, I introduced a trocar into the swelling and drew off three gallons of a thick, ropy, drab-coloured fluid, readily coagulated by heat, alcohol, and acids. The paracentesis was followed by great relief; but as the fluid soon began again to accumulate, it was thought best to advise the excision of the tumour, as the only chance of effecting a permanent cure. The patient promptly and cheerfully assented to our decision.

The operation was performed on the 19th of June. The bladder and bowels having been previously emptied, the patient was placed upon a table, and put fully under the influence of chloroform. The incision was made along the linea alba, and extended from near the pubes to three inches above the umbilicus, being at least one foot in length. The tumour, being thus completely exposed, was found to be very red and vascular upon its surface, and to adhere all around, inferiorly, by bands of false membrane, which, however, were easily detached by the hand. The pedicle was quite narrow, and, after being surrounded by a stout ligature, it was divided and the morbid growth lifted from its bed. Although the ligature had been tied with great firmness, it immediately slipped off after the part was cut, thus rendering it necessary to apply another. Previously, however, to doing this, a large artery included in the pedicle, and bleeding freely, was secured separately, lest the large ligature

might come off again, and thus lead to serious, if not fatal hemorrhage. A fasciculus of false membrane, on the left side, appearing to bleed, was treated in a similar manner. The blood being now carefully removed from the peritoneal cavity, the ligatures were brought out at the inferior angle of the wound, the edges of which were next approximated by nine twisted sutures, the needles being carried through the muscular fibres, about an inch and a quarter from each other. Strips of isinglass plaster were now placed in the intervals between the needles, and a narrow and rather thick compress was stretched along each side of the wound; the whole being supported by a broad bandage, passed round the abdomen and upper part of the thighs. The patient, pale, considerably exhausted, and in great pain, was put to bed, and took immediately one grain of morphia, followed by half a grain more in two hours.

The operation was performed at 11 o'clock in the morning, and at 4 o'clock in the afternoon I found my patient quite comfortable. She had slept a little, and was nearly free from pain; the skin was moist, the extremities warm, and the pulse soft and one hundred and twenty in the minute. She had vomited once soon after the operation, probably in consequence of having drunk too much water.

On the morning of the 20th, I learned that the patient had slept well nearly all night; she had urinated without difficulty; the abdomen was free from pain and distension; she could lie equally well on her back and sides. In the evening, the abdomen was slightly tumid and somewhat tender on pressure, the countenance was a little flushed, and the pulse was about 120. Half a grain of morphia was ordered to be taken at bedtime.

On the 21st, there was some tympanitis, but in other respects the patient was doing well. She had again passed a good night, had considerable appetite, and was free from abdominal tenderness.

On the 22d, an enema of half an ounce of castor-oil and a pint of flaxseed tea was ordered, and this was succeeded during the day by a slight fecal discharge, accompanied by a considerable quantity of flatus.

From this time on everything progressed favourably. On the 26th, she took a mild vegetable pill, which was followed by two small alvine evacuations; on the 27th, eight days after the operation, I removed the four upper needles, the rest being allowed to remain until the next morning. The wound, which was now supported merely by broad adhesive strips, had united entirely by the first intention, except at the sutures, where slight ulceration had commenced; the bowels moved spontaneously; and everything promised a happy issue.

On the 2d of July, menstruation set in, and continued until the 4th, when it ceased. The patient at this time looked pale and feeble; she was accordingly directed to take quinine and brandy in moderate quantities. Under this treatment, together with the aid of a light but nutritious diet, and good nursing, she went on well until about the 8th of July, when in consequence, apparently, of exposure to damp and heavy draughts of air, occasioned by a change in the weather, she was seized with a severe chill, followed by excessive prostration. Means were immediately resorted to for producing reaction, but several hours elapsed before she completely rallied, and she was never well afterwards. It was but too evident that peritonitis was going on, and that, notwithstanding the use of blisters and appropriate internal remedies, the case must terminate fatally. Miss D. lingered until the 17th of July, at 4 o'clock, when she expired.

The dissection, made twelve hours after death, was conducted by my friend, Dr. T. G. Richardson, who has kindly furnished me the following account of it. There was no external sign of putrefaction; the body was greatly emaciated; the abdomen was tense and tympanitic, with a sense of obscure fluctuation, and upon puncturing it, a considerable amount of gas issued from it. The walls of the abdomen were so closely adherent to the viscera as to be dissected off with difficulty; and the parietal portion of the peritoneum, greatly thickened throughout its whole extent, was firmly attached to the omentum, liver, spleen, and intestines, which were so completely buried in lymph as to be hardly distinguishable from each other. Owing to the peculiar manner in which the viscera were united to each other, the peritoneal cavity was divided into three distinct compartments, namely, two lateral and abdominal, and one pelvic, the

former containing each about half a gallon of turbid serum, mixed with shreds and cakes of lymph, and the latter about a pint of sero-purulent matter.

The internal extremity of the ligature which had been cast round the pedicle of the tumour lay loose in the pelvic cavity, but so completely were the organs concealed by the inflammatory deposits, that it was impossible to discover the point where it had been attached. The outer extremity was hanging out at the inferior angle of the wound, where it had effectually resisted the various attempts that had been made to separate it. The left ovary, with difficulty found, was somewhat softened, but in other respects perfectly natural. The uterus, with the exception of a little congestion of its lining membrane, was also unchanged.

The internal surface of the stomach and bowels, and the substance of the liver and spleen, presented nothing of a pathological character. The bladder also was sound.

The tumour, after its removal, was found to be of an ovoidal shape, being larger above than below, soft and fluctuating, and of a uniform outline, except at three points, where it was rendered slightly protuberant by the presence of small cysts. It was from ten to twelve inches in length, about eight in breadth, and nearly the same in the antero-posterior diameter. Its weight was about nine pounds. Laid open, it was found to consist of a single sac, filled with reddish serum and grumous blood, adhering to its surface. Its walls were fully an inch in thickness, and bore a very close resemblance to those of the gravid uterus. The adventitious or accessory cysts, previously mentioned, were attached to the main sac, but did not communicate with it. The largest, situated at the base of the tumour, was of the size of a hen's egg, and was occupied by a substance similar to that of the main bag; while the two smaller were filled with sero-albuminous fluid.—*Western Journal of Medicine and Surgery*, Jan. 1853.

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Ovariotomy.—[Dr. R. L. Howard, Professor of Surgery in Starling Medical College, reports (*Ohio Medical and Surgical Journal*, January 1853), the two following cases, in which he had performed ovariotomy in one successfully, and the other unsuccessfully.]

Case I.—*Ovariotomy in a young lady of* 17 *years, by a new method—Recovery.*—Miss R. J., æt. 17, of Franklin County Ohio, consulted me in August last, on account of a tumour in the abdomen. She informed me that in March last she had an attack of measles and recovered from the disease without any unusual symptoms. In May following, she experienced a pain in her left side which was persistent and crescent in its character. About the first of June she detected a "lump in the lower part of her bowels." This rather rapidly increased in size until the time of the consultation adverted to. On examination, I found a regular oval tumour filling the whole cavity of the abdomen and distending to a considerable extent its walls. Obscure fluctuation revealed more or less fluid in the centre of the tumour. The hymen was absent, but the uterus was found, on examination per vaginam, to be in a healthy condition and unconnected with the diseased ovary.

On the 18th of September, I visited Miss J., and found her labouring under considerable general disturbance and pain in the right side, apparently from the pressure of the tumour. Her pulse was remarkably frequent, beating some 130 to 140 per minute. The symptoms being of a distressing character, rapidly becoming worse, I, in consultation with Drs. G. W. and J. Helmick, decided to tap the tumour. On introducing the trocar, about a gallon of very thick albuminous fluid escaped, which completely relieved the patient of all her urgent symptoms. She remained quite comfortable for about two weeks, when the rapidly accumulating fluid and the increase in the solid growth, caused a return of all the distressing symptoms.

On the 8th of October I tapped her again, drawing off about the same quantity of fluid, with precisely similar results; but in a few days the tumour could be observed to grow from day to day, and it became evident that something more effectual must be done, if the life of the patient was to be rescued from the fatal result that awaited the progress of the disease.

On the 14th of October, a consultation was held with the attending physicians adverted to, and several leading physicians of Columbus, all of whom, without a dissenting voice, approved of an operation for the removal of the tumour at once.

The proper arrangements being made, and the patient placed upon a table, and fully under the influence of chloroform, I made an incision from three inches above the umbilicus on the linea alba to the pubis, dividing the integument, fascia, tendon, and peritoneum. The ovarian tumour was fortunately found free from adhesions; but its attachments to the uterus, &c., were rather extensive. I now adopted an expedient to which is due, *mainly*, the success of the operation. Fearing the effect of the ligature upon the delicate peritoneum, I divided it completely around the neck of the tumour upon a grooved director. In the groove or channel made by this dissection, I applied the ligature, which sunk deeply and readily into the loose cellular structures as I tightened the knot, without impinging in the slightest degree upon the contiguous peritoneum. The neck of the tumour was divided about one inch from the ligature, and the wound dressed in the ordinary manner. The whole operation was performed, and the patient placed in bed, without the least consciousness of pain on her part.

Since the operation, not an unfavourable symptom has occurred. The ligature came away, and the parts healed kindly; and now, Dec. 9, we believe she is perfectly well.

I had omitted to mention that the patient had several attacks of intermittent fever in August and September, and that she had not menstruated for near three months before the tumour was removed. I have not learned whether her menses have returned since.

I desire to call the attention of surgeons to that part of the operation wherein the peritoneum was divided, for the purpose of excluding it from the action of the ligature. I am not aware that the operation has ever been performed in this manner before, and yet it may have been; as I have not, on account of the pressure of my engagements, made myself familiar with the literature of Ovarian Surgery. I deem this step in the operation worthy of the highest consideration, and, considering the proclivities of the peritoneum to inflammatory affections, particularly under the influence of mechanical injury, I am only surprised that this proceeding has not been universally adopted.

Case II.—*Ovariotomy—Death on the 17th day after Operation.*—Mrs. H. M., aged 28, Franklin County, Ohio, after bearing her second child, about five years ago, observed a small tumour in the left iliac region, which was unattended by pain or inconvenience. Three years ago, in August last, she gave birth to a son, and third child. In January, 1851, she bore another son, her fourth and last child. Before her last pregnancy, the tumour filled and distended the cavity of the abdomen. During and subsequent to pregnancy, however, she enjoyed very good health, suffering only from mechanical inconvenience. Subsequent to the birth of her last child her tumour grew more rapidly, until I saw her for the first time, in company with Dr. J. B. Thompson, her family physician, on the 29th January last. On examination per vaginam, her uterus was found in its normal position and condition, but she, nevertheless, insisted that she was some five or six months advanced in pregnancy. Her reasons were, that her menses had been absent during that period, and, that she could distinctly feel the motions of her child. Not being able to convince her of the propriety of drawing off the fluid contained in the ovarian cyst, I left her, and did not see her again until the 13th of August last. Of course she had abandoned the idea of pregnancy, and was willing to submit to the operation of paracentesis. This operation was not performed until the first day of September, when nine gallons of dark fluid was discharged. She was exceedingly comfortable, and had a rapid recovery. After the evacuation of the fluid, there was found a large solid growth in the abdominal cavity.

Oct. 14th, we tapped her again, and removed about eight gallons; and, on the 26th, in consultation with her regular physician, and several other eminent physicians of our city, we proceeded to perform the operation of ovariotomy. The patient being placed upon a table, under the influence of chloroform, I

made an incision from near the umbilicus to the pubis. On reaching the tumour, its surface was found firmly adherent to the abdominal peritoneum. The adhesions were broken up from four to six inches beyond the boundaries of the incision. Being now persuaded that adhesions were general, and perhaps, universal, over the entire surface of the tumour, I abandoned my efforts at separation—removed by excision a portion of the ovarian cyst, introduced a tent made of lint through the opening into its cavity, for the purpose of preventing closure, dressed the wound by sutures and adhesive strips, and placed the patient in bed.

The shock of the operation was but slight, and she soon became comfortable. For several days she suffered but little, but a low form of inflammatory action attacked the tumour and peritoneum. The discharge became intolerably offensive, and under its influence she gradually sunk, until, the 17th day after the operation, she died, apparently from exhaustion.

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Collodion in the Treatment of Buboes.—Dr. J. H. Claiborne states, that he has used collodion for discussing bubo, and that it has proved superior to any other discutient. His mode of employing it is as follows: "When a patient with a bubo presents himself, if there be not much acute local inflammation, no matter formed, and no constitutional reaction, I immediately shave off the capilli from and around the tumour, and with a camel's-hair pencil apply the collodion upon the place, allowing one layer to dry before the application of another, until I form a scab or membrane of such thickness as I think will exert the proper compression. Sometimes the application has to be renewed in the course of twenty-four or forty-eight hours. If put on too thickly, it will give a great deal of pain; and I have seen it contract so tightly upon the tumour, that the epidermis would be split in fissures around the borders of the application. This will serve to give some idea of the force of the compression which it will exert. After the application of the collodion, it is better that the patient remain quiet for a day or two, take an aperient, and restrict his diet, though I have succeeded in discussing a chronic bubo when not an hour has been lost from his usual avocations. If there be much inflammation about the tumour, I usually endeavour to subdue this by general and local depletion, saturnine applications, rest, &c., before applying the collodion; and if the bubo be of venereal origin, institute, of course, the specific treatment for the existing disease.—*Stethoscope*, March, 1853.

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Repair of Fractured Bone.—Prof. Frank H. Hamilton, in a paper "On Provisional Callus in Fractured Bones," (*Buffalo Medical Journal*, Feb. 1853,) has given the conclusions at which he has arrived relative to the mode of repair of fractured bone—"conclusions nearly or quite identical," though independently arrived at, and by a somewhat different method, he says, with those promulgated by Prof. Paget, in his lectures before the Royal College of Surgeons of England. The doctrines taught by Prof. Paget were published in the No. of this *Journal* for Oct. 1849, pp. 483–5, and are well worthy of, and had, we believed, attracted much attention. But they seem to have escaped the observation of Prof. Hamilton, who states that he has seen no notice of Prof. Paget's views in American journals, and adds, what cannot but be regarded as not very complimentary to those alluded to, that "among the many eminent surgeons with whom I have conversed, both teachers and practitioners, only one or two retained a vague impression of their existence."

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Obituary Record.—It is with deep regret that we have to record the death of W. E. Horner, M. D., Professor of Anatomy in the University of Pennsylvania, which took place in this city on the 13th of March, in the 60th year of his age. Dr. H. was a native of Virginia, but has been for nearly forty years a resident of this city, during the greater part of which period, he was connected with the chair of Anatomy in the University. He long since achieved for himself the reputation of being one of the best anatomists of our country, and was universally esteemed for his honourable and upright character.

We have not the materials, at present, to enable us to present a sketch of the life and character of the deceased, but we trust that some one of his friends will undertake this task. In the mean time, we take pleasure in presenting the following proceedings:—

March 17, 1853.

At a Special Meeting of the Medical Board of St. Joseph's Hospital, held this day, for the purpose of taking action in regard to the death of their late President, WILLIAM E. HORNER, M. D., who departed this life on the 12th inst., it was unanimously—

Resolved, That in Dr. Horner, this Board have to lament one of the founders of the Hospital, a zealous and efficient advocate of its interests, and one of its most liberal benefactors, who spared neither his means, his labour, nor his skill, in furthering its welfare, and in healing the diseases of its inmates; that in him they also mourn a colleague and a friend, who in all his intercourse was urbane and considerate, and ever prompt to sustain them by his influence, and assist them by his counsel; one with whom it was a pleasure to associate, and from whose exemplary candour they could always look for a just appreciation of their own acts.

Resolved, That a copy of this Resolution be furnished for publication in the *Medical Examiner* and the *American Journal of the Medical Sciences.*

ALFRED STILLÉ, *Chairman.*

J. HENRY SMALTZ, *Secretary.*

OBITUARY NOTICE of the late WILLIAM POWER, M. D., of Baltimore.—Died, in Baltimore, on the 15th of August, 1852, and in the 39th year of his age, William Power, M. D., late Professor of the Theory and Practice of Medicine in the University of Maryland.

When the young die, we grieve for the hopes that have faded like the flowers that wither on their bier; when the places of the old know them no more forever, we mourn that the tree which had long sheltered us, and been perchance a landmark to the wandering, has fallen from its station; but when death smites the vine that was still giving us nourishment with its fruit and refreshment with its shade, how sadly tender is the memory of its fragrant blossoms, how mournful and desolate seems the future of whose riches it had offered so liberal a pledge. Such was our departed friend. His nature, his culture, his earlier, and his maturer fruits, combined to make his life a blessing to those who partook of his gifts or dwelt within his shadow; but, even whilst supplying others most largely, a worm was at his own core; so one by one his branches withered and he fell away from among the living.

His life was a life of earnest study, and of noble ambition. He came into the world of professional action thoroughly furnished with all that could make him a wise and accomplished physician. Just twenty years before his death he took the degree of A. B. at Yale College, and in the following year commenced in the office of Dr. Buckler a course of study, which, until the last year of his life, he never ceased zealously to pursue. In 1834, he entered, as a Resident Student, the Baltimore Almshouse Hospital, the institution of which he was destined to become, in later years, the most distinguished ornament. After graduating in medicine, and performing his hospital duties with ability and zeal, he determined to increase his knowledge by a course of study and observation in Europe, a step of which at that time there were but few examples in his native city.

The writer of this sketch first knew him in the midst of the scientific turmoil of which Paris was then the seat, and can testify to the ardent and steadfast enthusiasm which animated him; to his constant and unwearied attendance at the hospitals, the laborious records of his observations, his intelligent and discriminating discussions of the daily lessons which, in common with a crowd of American listeners, he was learning from the lips of Louis and Chomel, of Andral and Rostan, of Grisolle and Barth. In the rigid school of the Medical Society of Observation, and of its illustrious president, the astute and penetrating genius of Dr. Power found a severe but salutary discipline, and he

always referred to the evenings spent in its exercises as among the most delightful and profitable of his professional life. Its training developed his capacity for the systematic study of disease, and fitted him to become an example and a teacher to the medical students of his native city.

Enthusiastic in his pursuit of knowledge, he immediately, on his return home, sought and obtained anew the post of Resident Physician in the Almshouse Hospital, and only relinquished it when, after nine months' service, he was honoured with the appointment of Visiting Physician to the same institution. As a consequence of the disgraceful custom of allowing political partisanship to interfere with the administration of public charities, Dr. Power was removed from his office on a change in the direction of the almshouse; but subsequently, in 1841, was reinstated. In this and in the following year he delivered two courses of lectures on the Physical Exploration of the Chest at the Baltimore Infirmary, and under the auspices of the Faculty of the University. They were well attended, and gave him considerable reputation for attainments and skill in lecturing. His health now became precarious, and he felt obliged to quit his post, both as clinical teacher and lecturer, nor did he resume its duties until 1844. In the following year, he was appointed Professor of the Theory and Practice of Physic in the University of Maryland.

The influence of Dr. Power over the young men, who, as students or as assistant physicians, followed his daily instructions was unbounded. One and all caught somewhat of the enthusiasm which inspired their teacher and stayed him against the crushing weight of his disease. Before his time, we are assured, it was difficult to find candidates for the place of Resident Student in the Hospital, but owing to the interest with which he invested the duties of the office, and the reputation which the institution thereby acquired as a school of medicine, it was now only by an application of a year or more that candidates could secure their election. Even at this period, the physical sufferings of Dr. Power were such that he could hardly go up stairs without panting; yet his love of knowledge and his devotion to duty made him cling resolutely to his post, and point the way to others, although he did not hope long to tread in it himself. It is a sad, and at the same time a singular fact, that of the eight Resident Students who, in 1844–45, were his assistants, all but one preceded him to the grave! How painful a commentary is this on the deadly influences of our professional pursuits on life and health.

The career of Dr. Power as professor was a distinguished one. That it was singularly successful is proved by the large number of students whom he drew to the University; by the position he at once assumed among his professional brethren, and by the reputation he soon acquired as a clinical teacher in the College Infirmary. His thorough, systematic, and intelligent study of disease, his accurate diagnosis, and his mode of illustrating one case by another, interested his audience deeply, and accustomed them to observe for themselves. In a word, his whole system of analytical study, as he had learned it from the ablest teachers of Europe, attracted and delighted all of the maturer and best-furnished minds among his hearers, and gradually raised up a class of ardent cultivators of medical science, which has already given to the world some of the fruits of his instruction, and some earnest of their own future attainments. As a lecturer, we are informed, he did not aim at originality, but rested satisfied if what he taught, from whatever source obtained, was *true*. The confidence he inspired was boundless; for did he make a wrong diagnosis, or misstate a fact, he was the first to admit it when discovered, and to confess his error. His lectures were less remarkable for excellence of style and originality of thought, than for their presenting a calm and unbiased arrangement of the opinions of others, corrected and modified by his own experience. In this, as in all else, he held truth to be more valuable than ingenuity, and a positive result than the most elaborate and cunningly devised fiction. Yet, in dealing with the errors and follies of medical systems, he was careful not to forget the charity which is due to the weakness of human nature, nor the distinction, too often lost sight of, between the doctrines he combated and the persons who propounded or adopted them.

Dr. Power's health had never been robust. Emphysema of the lungs, and a consequent derangement of the heart's action, had, for a long time, made active exertion fatiguing to him. As long ago as 1837, a pedestrian tour in Switzerland cost him several paroxysms of severe dyspnœa and palpitation of the heart with hæmoptysis; but he did not become seriously alarmed about his situation until nearly six years afterwards. In the autumn of 1843, he was obliged to seek relaxation in Cuba, whence he returned in the following spring, with his health materially improved. He continued better, in the main, although far from being vigorous, and from time to time he showed the effects of too close an application to his duties as hospital physician. His marriage in 1847, and his appointment in the University, which he had received two years before, exerted, doubtless, a very favourable influence upon his health, for he continued to perform with animation and a good degree of vigour his professorial duties, to draw around him a crowd of earnest and attached pupils, and in the social circle to win by his amenity, and interest by his varied talents, a large number of sincere and valuable friends. But the disease which had so long been baffled by skill and sedulous attention at length gave signs that it was obtaining the mastery. During the winter of 1851–52, Dr. P. was unable to perform his public duties, and, in February of the latter year, resigned his professorship. In the month of May, the writer of this notice had the satisfaction of an interview with his old companion. He was wasted and wan indeed, for consumption had nearly worn away his earthly dwelling; but his soul shone all the clearer, and brighter, and purer for its freedom from the clogs of flesh. One might well have expected to hear the devotee of science, and the ambitious teacher, mourn over the unfinished career he had run, and resent the defeat of his wishes. But his spirit had been chastened. Contented with his share of worldly success, without a syllable of complaint at the disappointment of his hopes, he could still take interest in the science which he loved, and find in conversation upon its progress a consolation for his own withdrawal from a share in its rewards. Resigned and cheerful, he awaited with patience, yet with strong desire, the moment of his departure; for, while he longed for a release from suffering, he did not disdain the world in which he had been permitted to fit himself for a better.

For three months after this interview he waxed feebler and feebler, but his soul was more and more brightened by a light from beyond the grave, and displayed to the last moment the calm hopefulness of one whose heart is fixed on Heaven.

As a student, Dr. Power was intelligent and industrious; as an instructor, he was faithful in duty, thorough in teaching, earnest in manner, clear in exposition, copious in illustration, convincing in argument; as a friend, he was sincere and constant; and, as a man, noble in his aims, pure in his means, a scorner of the false and hollow, and a lover of the real and the true. Thus, true to Heaven and to human duty, he lived respected even by those who did not share his love, and died as they should die who see beyond the grave an immortality of knowledge and of blessedness. A. S.